

**XIII. Information About Actual and Potential Competitors (To the Extent This Information is Available)**

- A. For MVPD competitors, particularly cable systems, provide data by zip code or similar disaggregation detailing services offered (programming services, cable modem, and other services), number of subscribers for each service offering, and the prices charged for each type of service.**

While the Applicants do not possess comprehensive information about these MVPD competitors, attached as Exhibit XIII(A)-1 is a list of MVPD competitors by DMA. The list separates competitors in each DMA by major "MSOs" and minor "Other Competitors."

Attached as Exhibit XIII(A)-2 is a chart that lists on a national basis the number of subscribers for each of the top fifteen MVPD companies. This exhibit shows this list pro forma for announced transactions and for the years 1998 through 2000.

None of these exhibits purports to be a complete list of the Applicants' MVPD competitors.

- B. For broadband services, provide data by zip code or similar geographic disaggregation regarding the types, number of, and capabilities of competing suppliers of broadband services.**
- 1. For each geographic region, list all providers of broadband services that compete with your offerings, including one-way and two-way cable modem service, DSL service and terrestrial fixed wireless service.**
  - 2. For each of these providers, fully describe their offerings, including: download speeds, upload speeds, other services, pricing plans including installation charges and monthly fees, and equipment costs.**
  - 3. For DSL providers that compete with your service, indicate the share of television households in the geographic region that have access to DSL service.**
  - 4. For cable modem providers that compete with your service, indicate the share of households in the geographic region that have access to cable modem service.**
- C. Describe current and anticipated service offerings and rate plans for competitors that currently offer or are expected to begin offering satellite broadband services within the next two years.**
- D. Provide any studies, analyses, assessments, or considerations in your possession that involve comparisons of current and future satellite broadband services provided by competitors.**

**XIII(B)-(D):** While the Applicants do not have comprehensive information about their broadband service competitors, please refer to the charts attached as Exhibit XIII(B) (Broadband Service Comparisons). These charts do not purport to provide a complete list of broadband services provided by competitors.

- E. Identify the central requirements for entry into the provision of DBS and satellite broadband services, including, but not limited to, research and development, planning and design, equipment, distribution systems, patents, licenses, sales and marketing activities, and any necessary governmental approval. Also estimate the costs associated with these entry requirements and the amount of these costs that would be recoverable if the entrant were unsuccessful or elected to terminate its provision or sale of the service in question.**

General

There are numerous possible ways in which an entrant may compete in the MVPD market or portions thereof, and any entrant in the MVPD market (*i.e.*, any firm that were to offer video services into the home) would likely compete with DBS. MVPD entry could be accomplished utilizing any number of technologies. New entrants have an advantage because they can add new technologies without having to bear switch-out costs or use additional spectrum for duplicative services during a transition period. Here is an illustrative list of MVPD providers and potential entrants:

- **Cable television operators.**
- **Cable overbuilders and terrestrial wireline Broadband Service Providers.** The Commission has recognized “the growing importance of providers that are overbuilding existing cable systems with a state-of-the-art systems that offer a bundle of telecommunications services, including video, voice, and high-speed Internet access.”<sup>6</sup> The Commission has termed these overbuilders “Broadband Service Providers” (“BSPs”), and noted that despite the challenges inherent in BSPs’ strategy of entering markets with entrenched competitors, BSPs such as RCN and Knology are continuing to grow in terms of revenue and subscribership.<sup>7</sup>
- **BellSouth, Qwest and other Incumbent Local Exchange Carriers** are deploying fiber to the curb and VDSL technology and have achieved critical

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<sup>6</sup> *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, Eighth Annual Report, FCC 01-389 (rel. Jan. 14, 2002) at ¶ 13 (“*Eighth MVPD Competition Report*”).

<sup>7</sup> *See id.* at ¶¶ 109, 111.

mass in several cities.<sup>8</sup> Such systems can offer virtually limitless video and interactive bandwidth.

- **Electric and gas utilities** are also moving forward with ventures involving video distribution. The Commission has noted that although the utilities are “not yet major competitors in the telecommunications or cable markets,” characteristics of these entities, “such as ownership of fiber optic networks and access to public rights-of-way, could make them competitively significant.”<sup>9</sup> Importantly, utilities appear to hold great promise for competition in rural areas, as the Commission observed that “utilities, particularly some municipal utilities in rural areas, are willing to build advanced telecommunications networks offering a full range of services where incumbent cable operators and telephone companies are not.”<sup>10</sup>
- **Wireless cable providers**, including licensees in the **Multichannel Multipoint Distribution Service (“MMDS”) and Local Multipoint Distribution Service (“LMDS”)**. Terrestrial services such as MMDS are capable of serving an estimated 36 million homes. Although MMDS subscribership remained steady in the past year, the competitiveness of MMDS video offerings will likely be enhanced by MMDS operators’ roll out of high-speed Internet access service, which can be paired with video to create the type of bundled service offering that consumers increasingly find attractive.
- **The new Multichannel Video Distribution and Data Service (“MVDDS”)**, another wireless cable application. The Commission has reported that it is “technically feasible” for that service to share spectrum allocated to DBS in the 12.2-12.7 GHz band. The Commission has adopted a Further Notice of Proposed Rulemaking seeking comment on technical and service rules for licensing the new services. Four companies, Northpoint Technology, Ltd., MDS America, Satellite Receivers, Ltd. and PDC Broadband Corporation have sought licenses or otherwise expressed interest in providing such a service. While EchoStar and DIRECTV have opposed the interference levels posited by proponents of MVDDS, they have also stated on the record that competition from such services is welcome so long as no interference occurs.<sup>11</sup>

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<sup>8</sup> See *id.* at ¶¶ 100, 103 (while certain ILECs have exited the video business, others, such as Qwest and BellSouth, continue to pursue deployment of MVPD services).

<sup>9</sup> See *id.* at ¶ 104.

<sup>10</sup> See *id.*

<sup>11</sup> *Cable and Satellite Broadcast Competition: The Status of Competition in the Multi-Channel Video Programming Distribution Marketplace Before the House of Representatives*

- **NRTC and its affiliate Pegasus** will also likely compete against New EchoStar by using certain facilities of the combined entity if they desire to do so. Specifically, to the extent that DIRECTV's contract with NRTC grants NRTC the right to distribute certain video programming in certain areas, the merger would not alter its contractual rights. Since NRTC and Pegasus would not in those circumstances be constrained by New EchoStar's national pricing commitment, they would be able to continue to charge more to rural subscribers, as they do now, than DIRECTV or EchoStar, separately or together. In fact, however, the DIRECTV/ NRTC agreement makes clear that NRTC's *exclusive* rights are limited and will expire in the future. As a consequence, New EchoStar will be able to compete fully with NRTC/Pegasus throughout those areas where NRTC and Pegasus have distribution rights under their contracts. This may in turn mean that, for commercial reasons, NRTC and Pegasus no longer will be able to charge more than New EchoStar for the same service, but such a result would be a benefit, not a loss, for rural consumers.
- **DBS service from orbital locations allotted by the International Telecommunication Union to other countries.** A new entrant may offer DTH service by obtaining licenses to utilize, or by arrangement with firms controlling, non-U.S. orbital locations. Two companies, Digital Broadband Applications Corporation and World Satellite Network, Inc. ("WSNet"), have applications pending at the FCC to offer service to the U.S. from Canadian orbital locations. Similarly, Mexico and Argentina have reached agreements with the United States, whereby satellites from these countries' DBS and FSS orbital locations could provide satellite services to U.S. consumers subject to the same FCC licensing requirements that apply to the U.S. DBS orbital slots.<sup>12</sup> Other Latin American countries also have FSS orbital locations with the potential to serve American viewers with direct to home satellite services.

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*Energy and Commerce Committee, Subcommittee on Telecommunications and the Internet* (statement of Charles Ergen, Chairman and CEO, EchoStar Communications Corporation) (Dec. 4, 2001) ("While EchoStar does not oppose the emergence of new competitors in the MVPD market, we are opposing the proposal by Northpoint, because Northpoint's current proposal would cause electrical interference with the satellite reception of our established satellite TV customers as confirmed by the MITRE Corporation's testing."); *see also* Comments of EchoStar Satellite Corporation in CS Docket No. 99-250 (Aug. 16, 1999) at 1, 3 ("EchoStar welcomes new entry into the MVPD market and applauds the Commission's proposal" to open the 12.7 – 13.2 GHz band for use by all MVPD providers... [T]he Commission should consider this band as yet another possible home for the service planned by Northpoint Technology.")

<sup>12</sup> *See International Bureau Announces Conclusion of U.S.-Argentina Framework Agreement and Protocol for Direct-to-Home Satellite Services and Fixed-Satellite Services*, 13 FCC Rcd. 16581 (1998); *International Bureau Announces Conclusion of U.S.-Mexico Framework for Agreement and Protocol for Direct-to-Home Satellite Services*, 12 FCC Rcd. 13105 (1996).

While these international DBS slots are subject to various regulatory restrictions (such as foreign ownership and programming content limitations), these constraints are more or less significant depending on the company contemplating their use.

- **DBS service from other U.S. DBS orbital locations.** Non-full CONUS licensees, such as R/L DBS and Dominion, also will pose a competitive threat to New EchoStar. R/L DBS has proclaimed its ability to serve nearly every corner of the United States with regional programming from the 61.5° W.L. orbital location. R/L DBS is bound by the terms of its permit to commence service by December 2003. It reports that it will use next-generation technology, including spot beams and high-compression algorithms. This adds up to a potential strong competitor against existing DBS licensees. Dominion Video Satellite, d.b.a. Sky Angel, is also authorized to operate 8 DBS frequencies at the 61.5° W.L. locations.
- **Ka-band service.** MVPD competition could be brought to bear by any number of Ka-band licensees. Pegasus, for example, is free to use its valuable Ka-band licenses to provide MVPD service throughout the United States. Far from the dire picture of spectrum warehousing painted by opponents of the merger,<sup>13</sup> there is wide dispersion of Ka-band and other FSS licenses among a variety of licensees. In fact, of the full CONUS Ka-band and FSS orbital locations (those from 83° W.L. to 133° W.L. according to Pegasus),<sup>14</sup> licensees other than New EchoStar would hold a majority of the assets. Eleven other entities affiliated with neither EchoStar nor Hughes currently control orbital slots in the 83° W.L.-133° W.L. arc, which demonstrates that there are more than enough prime Ka-band slots controlled by others to ensure that the merger will not “stifle” competition in providing broadband services.
- **C-band services** are also maintaining efforts to attract rural subscribers. While C-band is certainly not an effective alternative in urban areas, it should not be discounted as an alternative in rural areas. NRTC itself is a major distributor of C-band service even as it resells DBS service. While acknowledging that the number of C-band subscribers has fallen over the past few years, PrimeTime 24, the self-proclaimed “leading provider of network television programming to the C-band marketplace,” claims that, as of November 2001, there were almost 900,000 C-band subscribers in the United States. Motorola is currently marketing its digital “4DTV” product with up to 500 channels.
- **Medium-power FSS satellites** still lend themselves to various DTH initiatives, as shown for example by BellSouth’s recent plan for a DTH

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<sup>13</sup> NAB Petition at iii, 11-12; Pegasus Petition at 63-69; NRTC Petition at 50-56.

<sup>14</sup> See Pegasus Petition at 71.

offering. While BellSouth has not gone forward with that plan, the fact remains that ample FSS spectrum remains available for medium-power and high-power satellite DTH initiatives. The recently announced DTH plans of Television & Radio Broadcasting Services ("TARBS") are another good example of this type of possible entry. TARBS plans to broadcast more than 50 channels of multicultural TV programming direct to consumers' homes by leasing C and Ku-band transponder capacity on the Galaxy 10R satellite.

- **Other satellite initiatives** include WSNNet, which provides satellite service to private cable and wireless providers, offering over 180 digital video, music, movie and pay-per-view channels. In conjunction with AT&T's Headend -In-The-Sky ("HITS"), another satellite supplier to cable and wireless cable operators, WSNNet is now offering a program that allows smaller cable operators an opportunity to offer digital direct broadcast satellite to their customers, using dishes and receivers for medium power Ku-band satellites. This is a low cost model because the satellite and cable assets are already in place, and WSNNet can use the marketing and distribution capabilities of existing companies (e.g., rural cable companies) to market the product, including to consumers unserved by the cable firms' wireline offerings. WSNNet offers the same or a similar product to residents of Puerto Rico in partnership with a large consumer electronics chain on the island. Canadian satellite companies such as ExpressVu and Shaw provide similar services in Canada and should be counted as potential entrants for the U.S. MVPD market. In addition to its Vu! pay per view service, ExpressVu has been allowed by Canadian regulators to operate a national satellite distribution undertaking providing satellite services to smaller cable companies in Canada. Shaw has acquired control over the former Star Choice service and has similar authorizations.
- **Expansion DBS spectrum.** The FCC recently allocated additional "expansion" spectrum for DBS operators in the 17 GHz band starting in 2007.<sup>15</sup> This allocation was made in conformity with the corresponding ITU Region 2 allocation, although the Commission allocated only 400 MHz to the BSS whereas the Region 2 allocation is for 500 MHz. See ITU Radio Regulations Footnote S5.517.

Following is a discussion of some elements of entry, and the costs associated with them. Potential entry may well be in specific types of service and/or specific geographic regions.

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<sup>15</sup> See *Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use*, Report and Order, 15 FCC Rcd. 13430, 13475-77 (2000).

Entry Into the MVPD Market – DTH Service

**Satellites.** In general, the rule of thumb in the MVPD industry is that it would cost approximately \$250 million and take approximately 2-3 years to design, build, insure, and launch a new DBS satellite. A number of commercial vendors have experience in satellite construction. Loral, Lockheed Martin and Boeing have built satellites for EchoStar and DIRECTV. Other U.S. and foreign manufacturers are capable of building DBS satellites. A new satellite could include spot beaming capability to gain geographic reuse of some frequencies to allow for more local or regional programming.

Alternatively, or in addition to constructing a new satellite, a new entrant might be able to buy an existing satellite that is partially constructed. At any given time, there may be on-ground satellites for sale or potentially available, because, for whatever reason, plans or funding for the satellite have fallen through. A new entrant might be able to use one of these partially completed satellites as a basis for construction of a new DTH system, and thus save considerable time and money.

If the new entrant were unsuccessful, some portion of the value of the satellite could be recovered by selling it to another current or potential DBS provider. If the satellite were not yet launched, it might be convertible to other uses and/or sold on the global market. If the satellite were in orbit, the pool of potential buyers would be smaller.

A new entrant could also enter the direct to home satellite business, or segments thereof, by leasing transponder space on an existing satellite, rather than constructing its own satellite. A number of firms, including Loral, Lockheed Martin, PanAmSat, and SES Americom, offer for lease transponder space on their geostationary satellites that could be used to provide medium power Ku-band or C-band satellite television service to residences in the United States. The costs of leasing transponder space vary. A rough estimate is that it would cost approximately \$2 million per year to lease one CONUS transponder (subject to availability) to carry a medium power Ku-band signal. One transponder would enable an entrant to broadcast approximately 10 channels of programming across the continental United States. An example of this approach is Dominion Video Services, d.b.a. Sky Angel, which leases bandwidth from EchoStar in order to provide DBS service to its customers. It may also be possible for a firm already in another aspect of the satellite market to expand its offerings to MVPD consumers without the need for launching a new satellite.

Because of limited transponder space and the difficulty of integration, it would be difficult to offer a broad array of programming by using leased satellite transponders. However, an entrant could offer a low-priced basic service with a smaller number of channels that might be attractive to some consumers. As previously indicated, WSNNet and AT&T's HITS currently provide satellite service to cable and wireless providers that allows them an opportunity to offer digital service to their customers, using a 27-inch dish and receivers for medium power Ku-band satellites. Motorola's C-Band participation with its digital "4DTV" product also offers up to 500 channels of programming.

**Encoding and Uplink Facilities.** A new entrant would need to build a set of compatible equipment for its own uplink and encoding facilities. The equipment necessary to

receive signals from programmers, usually sent by FSS satellites, is commercially available from several vendors. If the new entrant chose to offer local-into-local programming, it would need to construct or lease facilities in the local DMAs served to collect the signals from the local broadcast stations. Those signals could then be transmitted either by digital data lines or by FSS satellite, and the means for both are readily available on the open market. The equipment to compress, encode, multiplex, and modulate the digital signal is commercially available from multiple vendors. The necessary equipment to transmit the signal to the satellite is also commercially available from many vendors. The costs of the entire set of equipment necessary to gather, process, encode and send a signal to a satellite would depend on numerous choices in capabilities. If the entrant were to fail, some portion of the value of the equipment might be recoverable by reselling the equipment.

***Subscriber Acquisition Costs.*** In order to enter the MVPD market, a DBS provider must establish (whether through its own facilities or by relationship with an established or new vendor) the ability to manufacture and deliver the necessary customer premises equipment to end users. Acquiring subscribers in the DBS business has historically required subsidization of the consumer premises equipment and other costs (*e.g.*, because the target market is comprised largely of cable subscribers who are unlikely to switch if doing so requires a significant up-front investment). Subscriber acquisition costs are generally comprised of two main components: (a) subsidies to retailers and manufacturers designed to reduce the price of equipment to the consumer; and (b) subsidized sales and marketing expenses.

***Customer Premises Equipment.*** A consumer needs two basic pieces of equipment (in addition to a television set) to receive and translate a satellite signal: an antenna or "dish" and a receiver or "set-top box." There are many electronics equipment manufacturers capable of producing such equipment, including Thomson Consumer Electronics, JVC, Philips, SCI and others. A new entrant could choose to follow the EchoStar model of contracting with an equipment vendor to produce the equipment, with EchoStar selling the equipment to retailers and consumers, or the DIRECTV model of licensing third party manufacturers to manufacture and sell DBS equipment under their own name. The cost of set-top-boxes varies depending on the level of technology included in the box. For example, EchoStar's top line receivers include hard drives for recording and playing back broadcast material. A global organization, Digital Video Broadcasting, has developed a set of standards for digital equipment that have been used by numerous companies, including EchoStar and DBS firms in Europe and Asia.

The other major cost associated with consumer premises equipment is installation. Average installation costs for a high-powered DBS system are approximately \$150 per consumer installation, although a certain percentage of the prospective customer base could self install their dish, wiring and equipment. Installation cost for the larger medium power Ku-band dishes and receivers would be slightly higher. Costs of installing a C-Band dish are about \$550 per installation. To the extent that installation must be subsidized, it would be considered a cost of entry.

***Distribution, Marketing, and Installation.*** A new DTH firm would have to select its distribution and marketing approach. At one end of the spectrum, the firm could develop a national or regional marketing system for selling directly to consumers. At the other end of the spectrum, a new entrant could partner with existing firms to market and distribute

their system. For example, a new entrant could partner with local telephone companies or utility companies, who have established relationships with potential customers, which would reduce the costs an entrant would need to incur to acquire subscribers. A company could also develop relationships with retailers to sell its products and services. For example, when WSNNet began providing satellite television service in Puerto Rico, it partnered with a large consumer electronics retailer on the island. A new entrant could also use direct marketing. The investment required to establish the necessary distribution and marketing infrastructure depends greatly on numerous variables. However, it would likely be possible for a new entrant to establish a marketing system with limited up-front costs by making per-system and residual payments. These payments would not be recoverable if the entrant was unsuccessful, but future payments would likely not be required.

**Patents.** As with any sophisticated electronic technology, a number of firms hold patents that could potentially be implicated in manufacturing DBS equipment or providing DBS service. Generally speaking, the necessary technology can be developed independently or licensed on commercially reasonable terms, although several firms have asserted patent infringement claims against EchoStar and DIRECTV in connection with certain DBS technology. Both companies believe, however, that none of these claims has merit, and even if upheld in court, they should not block a new entrant in the provision of DTH service.

**Programming.** In order to offer MVPD service, a new entrant would need to license existing programming or create its own programming. While there are a number of programmers who offer programming content at a reasonable rate, much of the “crown jewel” programming that consumers demand is controlled by a limited number of companies. In fact, the top five programmers account for approximately 75% of the programming costs of the average MVPD provider. Programming costs are a significant part of the costs of any MVPD provider.

**Regulatory Licenses.** In order to offer DBS or DTH service in the United States, an entrant would need either a license from the FCC, or make some arrangement with a firm that holds a license with the FCC.

#### Entry Into The Broadband Market

Entry into the broadband market through a satellite platform is more difficult than it is for video service: among other things, the technology is newer and untested and the service is more bandwidth-intensive. Here too, however, there is ample spectrum available: the Commission has issued many Ka-band satellite licenses that can be used to provide satellite-based Internet access service. A number of well-financed ventures aggressively sought these Ka-band licenses and took steps towards implementing these services. Given the current uncertain economic environment, and the fact that demand for broadband Internet service in general has not matched its original projections, virtually all of these firms have scaled back from their original plans. Several of these firms were forced to postpone or cancel their plans. Nevertheless, these firms’ licenses, for the most part, remain current, and a number of them have the wherewithal to make the substantial investment in satellite broadband if they determine that they can be successful.

As a general matter, a primary requirement for entry into the satellite broadband market is access to a large potential customer base within a reasonable period of time. As discussed in more detail below, the fixed costs of originating and providing service over a broadband satellite platform are substantial. EchoStar and Hughes believe that they would need to attain at least 5 million subscribers within a five-year period to justify the significant up front investment and subscriber acquisition costs associated with actually marketing and deploying a new, ubiquitous two-way broadband service to consumers in the Ka-band.

Satellite broadband entry can be achieved through the deployment of a firm's own two-way satellite network, through the lease of two-way transponders from another satellite operator, or through the provision of hybrid service from one-way satellite downlinks and terrestrial return paths (*e.g.*, dial up modem).

### **1. Deployment of Satellite Two-Way Networks**

A company could enter the satellite broadband market by building and launching its own geostationary orbit ("GSO") or non geostationary orbit ("NGSO") satellites. Under standard industry practice, it generally takes two to three years to design, construct and launch a typical GSO satellite; however, Ka-band satellites may take longer to deploy due to the application of the technology commercially for the first time. Although the cost of a satellite designed for Internet access can vary considerably, depending on the frequency band and whether the satellite includes more complex technology, such as spot beams and on-board processing, a rough estimate of the cost to design, build, launch, and insure a Ku- or Ka-band GSO satellite for Internet access is between \$350 million and \$700 million. Multiple GSO satellites are required, however, for such a consumer service in order to provide the necessary backup facilities in case of an in-orbit failure and to enable the provider to reach a critical mass of subscribers. NGSO systems require a larger number of satellites in order to deploy a fully operational network of satellites that can provide continuous coverage of the United States. Depending on the orbit – low Earth versus medium Earth – anywhere from 10 to 844 NGSO satellites have been proposed by system proponents. While the costs of individual NGSO satellites generally are less than GSO satellites, overall NGSO system costs tend to be substantially higher due to the numbers of satellites involved. A number of commercial vendors, including Loral, Lockheed Martin, Boeing, and others, possess experience in this business.

Hughes's current plan for its SPACEWAY broadband program is to construct and launch three specially designed GSO satellites for Internet access and other broadband services. Deploying the SPACEWAY system requires an initial capital expenditure in excess of \$1.8 billion, and the development of complex technology that has never before been deployed in a commercial satellite network.

Each of the three SPACEWAY spacecraft is designed to utilize 500 MHz of spectrum (19.7-20.2 GHz downlink; 29.5 - 30.0 GHz uplink), and, depending on the quality of service levels and the amount of bandwidth capacity demanded by business and consumer customers, could serve business users and up to 1.0 to 1.3 million U.S. consumers. This satellite is optimized for broadband services. In order to support these large expenditures and mitigate the attendant risks, the Hughes business plan assumes a rapid growth in users, and primarily targets enterprise customers. Because Hughes has an established VSAT business clientele, it is

better situated to secure this business than an entrant without such relationships and expertise. Hughes also has targeted these customers because they present a greater opportunity to generate additional revenue, they are not as cost sensitive as residential users to up front costs of acquiring equipment, and they are familiar with the requirement of professional installations.

A satellite broadband service provider also needs at least one and possibly several large uplink/downlink facilities to connect the terrestrial Internet backbone to the satellite network. A spot beam satellite could require anywhere from 4 to 12 of such large interconnection facilities depending on the satellite configuration. Each such facility could cost anywhere from \$1 million to \$5 million.

A satellite broadband consumer needs an antenna to send and receive the signal, a transceiver to amplify and decode the signal, and a satellite modem to translate it. Many electronics equipment manufacturers are capable of producing such equipment. A new entrant could contract with an equipment vendor to manufacture the equipment and resell that equipment to consumers and retailers under its own name. This is the approach employed by StarBand. Alternatively, a new entrant could license third parties to manufacture and sell the necessary equipment under their own brand names. For Ku-band equipment, the median combined cost of the transceiver/modem and other components is currently around \$750, depending on the type of CPE. As noted in Section IX(E), Ka-band equipment costs initially are expected to be substantially higher than Ku-band CPE. However, the Applicants expect the proposed merger to help drive these costs down over time. In order to price equipment at a level that consumers will accept in the current competitive environment, the new entrant would likely have to subsidize a portion of the equipment and installation costs for each residential subscriber.

In addition to the costs of satellite infrastructure and subscriber equipment, any entrant is likely to incur substantial subscriber acquisition costs in order to acquire enough new subscribers to make its investment worthwhile. These costs include sales and marketing expenses as well as equipment and installation subsidies. While it is difficult to estimate precisely, it is anticipated that the costs of actually marketing and deploying SPACEWAY services to consumers will require a significant additional investment far beyond the \$1.8 billion of capital costs for the SPACEWAY system. Particularly in the current economic climate, it would be very difficult to obtain funding for the significant cash resources needed to acquire consumer subscribers. Such an investment makes sense only if the costs of acquiring consumers are at a level that is sustainable by the expected revenue stream from those consumers, taking into account anticipated subscriber churn. Moreover, the subscriber acquisition costs for such a large customer base will consume significant cash resources which Hughes alone has a very limited financial ability to provide and the merged entity will be better able to provide.

A new entrant in the provision of satellite broadband services to consumers would need to promote its offering through various means, such as advertising on the Internet, print and broadcast media, direct marketing and point of sale displays at equipment resellers. Alternatively, the new entrant could avoid or defray the direct cost of sales and marketing by entering a cooperative sales arrangement with established national or local ISPs or DSL providers. Such an arrangement, however, would most likely result in increased commissions having to be paid for signing up customers.

There are two elements to distribution of satellite broadband service: distribution of the equipment necessary to receive the service, and distribution of the service itself. With respect to equipment, potential distribution channels include DBS and C-band dish dealers, consumer electronics stores, and direct-to-consumer sales through the Internet or direct mail. Dealer commissions for sales of equipment will vary widely, but can be expected to fall roughly between \$150 and \$300. In addition, the antenna requires professional installation. This could be accomplished through the dealer or store, through technicians certified by the broadband provider, or by the new entrant itself. Installation costs for a consumer installation most likely would be approximately \$150 to \$200. For a business system, the cost could be much higher depending on the height of the building, number of connected computers, and other factors.

The new entrant could also distribute the service by partnering with established Internet service providers, selling the service through retailers who also offer the equipment, or simply selling the service itself. Telephone companies who want to offer a broadband option where they do not offer DSL are also possible candidates for cooperative sales arrangements. Establishing these or other relationships would be an important element of entry.

Although a number of firms hold patents that could be implicated in manufacturing satellite broadband equipment or providing satellite broadband service, generally speaking, the necessary technology should be able to be developed independently or licensed on commercially reasonable terms.

To launch and operate a GSO or NGSO satellite system in the United States in the Ku- or Ka-band, a new entrant would need a FCC license, or partner with or lease capacity from a firm that had such a license. Companies with Ku-band licenses include SES Americom, Loral Skynet, Lockheed Martin, and PanAmSat. In addition to Hughes and EchoStar, a number of companies were awarded licenses for Ka-band orbital slots, including Lockheed Martin Corporation, DirectCom Networks, CAI Data Systems, Inc., TRW, Inc., Pegasus Development Corporation, CyberStar Licensee LLC, SES Americom (formerly GE American Communications, Inc.), Astrolink International, NetSat 28 Company, LLC, Motorola, Inc. (application to transfer to Teledesic Corporation pending), Loral Space & Communications Corporation, Pacific Century Group, Inc., KaStarCom World Satellite, LLC (now controlled by Wildblue), PanAmSat Corporation, and WB Holdings 1, LLC. None of these firms has yet launched a Ka-band satellite. The venture that seemed to have made the most progress before abandoning its efforts was Astrolink. The Astrolink joint venture to offer Internet broadband via Ka-Band satellites was backed by Lockheed Martin Corp, TRW, Telecom Italia, and Liberty Media among others. According to published reports, Astrolink believed that it would require a total investment of \$3.7 billion to \$4 billion to launch its service, with Lockheed investing \$400 million, Liberty Media investing \$425 million, and TRW and Telecom Italia each investing \$250 million. This venture apparently was unable to raise further funding due to investor uncertainty about the prospects for satellite broadband service as a viable business. See "Joint Venture Backed by Lockheed Group Is Expected to End Satellite Investment," *Wall St. Journal*, October 30, 2001. It was further reported that Astrolink reported that it had terminated its Ka-band spacecraft contract with Lockheed Martin, after having built 90% of the first spacecraft, and after having spent about \$710 million on its Ka-band system. See "Decision Nears on Astrolink as Lockheed Ends Funding," *Communications Daily*, Nov. 1, 2001. It is unknown whether anyone will proceed with the development of these Astrolink assets.

## 2. Entry by Leasing Transponders

StarBand, in which EchoStar is an investor, offers Ku-Band Internet service by leasing transponders on two Ku-band satellites. (EchoStar markets, on a non-exclusive basis, StarBand's products in the United States.) Hughes' DIRECWAY service offers a similar service by leasing capacity on five Ku-band satellites. Although EchoStar has publicly stated that it does not believe that leasing Ku-band satellite transponders is a profitable long-term solution for satellite Internet access, another firm could seek to enter using a similar model.

A number of firms currently lease FSS Ku-band CONUS transponders on GSO satellites, which could be used to provide broadband service to consumers. The cost of leasing Ku-band transponders varies, but a rough estimate of the cost to lease a FSS Ku-band CONUS transponder is \$2 million per year. The number of subscribers that can be supported by such a transponder is primarily a function of transponder loading capacity, user demand, and the desired data transmittal rate. Information about the number of subscribers on Ku-band transponders is provided in response to Interrogatory IX. Because CONUS beams reach the entire U.S., even a small entrant would have the technical ability to serve most of the United States. At present, there is limited availability of CONUS transponders in the Ku-band. It may also be possible to lease Ka-band capacity from another licensee. For example, Wildblue is leasing Ka-band transponders from Telesat Canada.

For an entrant that sought only to lease transponders from an existing satellite provider, no FCC licenses would be required. The firm that owns and operates the satellite would be the FCC licensee. As discussed above, a variety of firms have licenses to operate FSS Ku-band satellites that could be leased to deliver broadband service in the United States.

## 3. Entry Using Hybrid Satellite and Dial-up Service

Frontline Communications and DirecPC are examples of hybrid satellite and dial-up services in which the subscriber uses a narrowband (dial-up) connection for uplinks, and a satellite for downlinks. As with Ku-band and Ka-band, this method of entry requires use of satellite transponders, but entails less complexity since the satellite transmission is only one way.

However, one-way satellite Internet access is inferior to two-way service in a number of respects: Most notably, the uplink speeds are slower and the service ties up a phone line. On the other hand, a one-way receiver is less expensive than a two-way transceiver, and the service is on the whole faster than ordinary dial-up Internet service. The costs of entry are otherwise not significantly different from two-way broadband service except that more users can be served per transponder.

## XIV. Post-Merger Plans

- A. **Provide detailed explanations of post-merger plans for video programming and other services, sales and marketing, pricing, retail distribution and customer service.**

With the spectrum efficiencies gained by eliminating duplicative programming between EchoStar and DIRECTV, New EchoStar will significantly enhance its video

programming offerings. First, by utilizing spectrum efficiencies and existing and planned satellites in conjunction with the launch of a new spot beam satellite, New EchoStar will serve all 210 DMAs with local broadcast service, as detailed in the New EchoStar 1 satellite application filed concurrently with the Applicants' Opposition and Reply Comments. Second, New EchoStar will be able to expand its offerings of national networks, particularly niche services such as foreign language programming and other content that traditionally has not gained carriage on cable systems. Third, spectrum efficiencies will allow for expanding the number of HDTV programming channels from the 2-3 channels offered today to 12 or more channels (HDTV channels require approximately 8 times the bandwidth of an ordinary digital channel).

With respect to other services, spectrum efficiencies will translate into new interactive services. These likely will include near Video-On-Demand, games, educational interactive programs, television commerce, and other services which create a two-way interactive television experience. Such services become more feasible with the advent of additional spectrum capacity, and by virtue of its roughly doubled spectrum capacity, New EchoStar will be able to implement interactive services while simultaneously carrying more traditional video services. In addition, New EchoStar will be able to offer bandwidth-intensive applications such as telemedicine, particularly relevant to the rural subscriber base.

With respect to broadband services, as explained in more detail above, the merger will allow the deployment and marketing of an acceptable-risk, full-fledged consumer broadband service that can vie for a critical mass of residential subscribers. Simply stated, today it is not reasonable, as separate companies, to expect to obtain financing for a satellite broadband service catering primarily to consumers on a large scale. The merger will make such a project sensible from the business perspective because of the larger pool of DBS subscribers that the combined company can seek to attract, the lower risk, substantial manufacturing cost savings, other economics of scale and higher rate growth associated with that larger subscriber pool, and other significant cost savings for uplinks and other infrastructure.

The Applicants currently are developing detailed plans for consolidating the sales and marketing operations of the two companies. New EchoStar will reap cost savings by combining such operations, eliminating redundancies wherever possible, and utilizing the best operating units and employees offered by the combined pool of resources. Similarly, customer service operations will be consolidated wherever possible, although New EchoStar probably will not be able to realize as many efficiencies in this category as others, since the number of subscribers per customer service representative generally remains fixed. The combined company will also secure advertising economies, as it will be able to spend fewer dollars per subscriber than each company today.

The Applicants anticipate that they will be able to reduce subscriber acquisition costs by marketing to a combined subscriber base, reducing the cost of subscriber equipment through economies of scale, and continuing the trend to direct marketing to consumers and selling via the Internet and over the telephone. Also, the improvements to the DBS product by the addition of local channels, more HDTV, and the other new and enhanced programming and services, provide retailers with increased benefits and related increased incentives to seek DBS relationships and to promote DBS sales.

With respect to the retailer arrangements, New EchoStar intends to keep current retailer arrangements in place. Competition among retailers always has yielded attractive value for consumers, particularly in rural areas where retailer-to-retailer competition has ensured not only high value, including installation and equipment savings, but also superior customer service for consumers. In addition, New EchoStar expects the trend toward direct sales, particularly via the Internet, to continue unabated, helping to reduce subscriber acquisition costs.

Also, with the opening of spectrum, New EchoStar anticipates that it will be able to increased opportunities for revenues from interactive programming and services such as pay-per-view, shopping, “jukeboxes” and games.

In keeping with the past practices of both EchoStar and DIRECTV, New EchoStar will continue to price competitively in order to vie for cable customers. Finally, the Applicants fully expect that they will be able to stem the current disconcertingly high rate of growth in programming costs and to bring it down closer to general inflation rates.

- B. Provide detailed description of cost savings expected to be realized as a result of the merger, and an explanation of what portion of these savings could not possibly be achieved absent the merger.**
- C. Describe other efficiencies that are expected to occur as a result of the merger, and that could not be achieved without the merger.**

New EchoStar will achieve significant cost savings and other efficiencies through the elimination of duplicative functions and by offering a superior product attainable only through the proposed merger. These significant efficiencies will allow more competitive DBS pricing to the benefit of MVPD consumers.

After combining, the Applicants expect to realize approximately of synergies on a net present value (“NPV”) basis.<sup>16</sup> The Applicants expect that approximately , or about of the total NPV synergies, will be achieved through reducing subscriber acquisition, programming, and administrative costs, and capital expenditures, as well as reducing subscriber churn.

New EchoStar will incur lower subscriber acquisition costs than would either firm standing alone, due in large part to the benefits of an expanded subscriber base. First, a subscriber base of about 18 million,<sup>17</sup> ultimately reaching over within five years, combined with a unified platform, would allow New EchoStar to obtain volume discounts otherwise unavailable to EchoStar or DIRECTV from equipment manufacturers and suppliers.

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<sup>16</sup> All NPV amounts are calculated using a discount rate of 10% and terminal value multiple of 14.

<sup>17</sup> This number includes approximately 1.9 million households served by NRTC Members and Affiliates.

Second, the combined entity would be able to consolidate marketing and advertising expenditures, avoiding duplication of efforts and targeting advertising and marketing activities more effectively. Instead of EchoStar and DIRECTV each purchasing a full page advertisement in a local newspaper aimed at current cable subscribers, for example, New EchoStar would buy only one such advertisement to reach the same consumers.

Third, New EchoStar would reduce subscriber acquisition costs by increasing the efficiency of existing retail distribution channels. The products and offerings of New EchoStar will be significantly improved, including through the provision of Video-On-Demand, interactive services, additional HDTV, broadband, and access to an increased breadth of programming. Because this will lead to increased sales to retailers, not only of DBS equipment but of complementary products like HDTV sets, retailers will receive more benefits from DBS, and thus will have greater incentives to affiliate with and promote DBS.

Also, the merger will allow standardization of currently incompatible DBS technology. This will both reduce manufacturing costs due to increased volumes and more efficient manufacturing, and facilitate the incorporation of DBS technology into digital televisions by companies such as Thomson Consumer Electronics (RCA) and Sony, eliminating the cost and burden of a separate decoder set-top box. Incorporation of DBS technology into television sets will even more dramatically reduce manufacturing, marketing and distribution costs. Incorporation of DBS technology into television sets will also reduce the barriers to consumer acceptance to DBS by reducing the consumer's need for separate equipment purchases and by increasing familiarity with the DBS product. As a result, consumer electronics manufacturers and retailers will have increased incentives to affiliate with and promote DBS. At the same time they will reduce their handling and inventory costs – and their need to devote resources to separate sales and educational efforts for what many consumers now perceive as a complex and difficult to understand product. (Only this merger will result in significant rationalization and expansion of HDTV programming and equipment sales.)

In addition, the merger will accelerate the process through which DBS technology becomes more broadly accepted and ubiquitous (the merger will do this, among other ways, through the commitment to provide local coverage in all DMAs). By making the DBS product more ubiquitous and desirable, the merger will thereby accelerate the market maturation process. As more and more consumers come to understand the benefits of this once unfamiliar product, the costs incurred in educating them about the product are reduced.

All these merger-related factors will allow New EchoStar to expand practices that the Applicants have already successfully begun, appealing to consumers directly with low-priced offers while reducing its total subscriber acquisition costs for items that do not directly benefit consumers. A good example of this is the "I Like 9" program, which allowed EchoStar to offer consumers, both directly and through its retailers, a very attractively priced basic programming package for \$9 a month for the first year (with similar discounts for higher level packages) while at the same time reducing its total subscriber acquisition costs. By increasing the appeal and visibility of the DBS product, the merger will allow continued and increased focus on direct sales channels and other retail channels that will help to ensure provision of high value to consumers.

Programming costs to New EchoStar are expected to drop by about . The combined subscriber base will allow New EchoStar to take advantage of volume discounts under existing programming contracts currently unavailable to each DBS company standing alone. Also, the combined companies expect to secure terms which more closely reflect those obtained by the large cable operators, who historically have received more favorable pricing, advertising, and other terms from programmers than have DBS operators.

By combining their operations, EchoStar and Hughes would eliminate or rationalize many overlapping functions. Broadcast operations could be consolidated. Backhaul from local receive facilities, currently duplicated in each of the local markets served by EchoStar and DIRECTV, could be combined. Administrative functions such as human resources, billing and customer service, finance, legal and information technology infrastructure could be streamlined and rationalized. Installation and service vehicle fleets could be consolidated. Similarly, New EchoStar's capital expenditures, such as for satellites and launch vehicles, would drop as a result of the merger because of more efficient utilization over a larger subscriber base.

Finally, subscriber churn will decline because of the cornucopia of attractive new services that the merger will make possible, combined with the more competitive prices that New EchoStar will be able to charge. Customers who ordinarily would have dropped EchoStar or DIRECTV service to return to cable would be more likely to remain satisfied customers. Specifically, New EchoStar will be able to offer consumers in all 210 DMAs the option of local broadcast channels, along with increased high definition and niche programming, Video on Demand, pay-per-view, and competitive broadband service offerings at attractive prices. This significant, qualitative improvement in DBS service would make DBS a more attractive product than it is today, increasing subscriber loyalty.

Regarding other efficiencies, the Applicants estimate approximately [REDACTED], or [REDACTED] of the NPV synergies, will be achieved through significant revenue opportunities due to merger-generated service improvements. These enhanced revenues would represent consumers' resounding endorsement of an effective alternative to cable and the pent up demand for quality MVPD service, local broadcast channels, effective broadband alternatives, and additional content sources and applications. EchoStar and Hughes estimate that the merger-specific service enhancements will produce roughly [REDACTED] more incremental subscribers over five years than both companies would have acquired during the same period absent the merger. Only through merging will EchoStar and Hughes be able to offer local broadcast signals in every market together with enhanced HDTV, Video on Demand ("VOD"), pay-per-view, and high-quality, attractively priced broadband. These service improvements will stem the churning of DBS customers to cable, and increase the rate at which New EchoStar will attract new subscribers to DBS. The resulting gains in subscribership ("subscriber lift") will result in very substantial net revenue gains for the new company.

Moreover, New EchoStar will be better positioned than either DIRECTV or EchoStar is today to reap additional revenues from advertising sales and interactive applications. Through its significantly increased subscriber base, New EchoStar will be better able to obtain more minutes per hour of advertising time to sell on the open market. The interactive applications made possible by the merger's enhanced spectrum efficiencies also will introduce new revenue streams, such as transactional fees on "television-commerce," fees for games and other applications, and advertising on interactive program guides. Broadband also will generate incremental revenues and its attractiveness to consumers will help reduce churn, as described above. Neither company standing alone could achieve the requisite subscriber base and efficiencies to offer a price competitive broadband service. The revenue synergies expected to flow from the merger are shown in the following chart.

The estimated cost reductions and revenue enhancements outlined above have been developed in the course of the transition and implementation planning process that has occurred to date, and are the best estimates at this time.

**D. Provide all analyses, assessments or consideration of plans to modify (post-merger) contracts with equipment manufacturers.**

The current EchoStar receiver manufacturers are JVC (Japan) and SCI (USA). Both companies are being considered for increased production rates of EchoStar designs to support post-merger demands. A third contract manufacturer is being considered for additional manufacturing capacity. EchoStar is in discussions with Thomson Multimedia Inc to finalize an agreement to license the manufacturing and distribution of receivers by Thomson. In order to support a combined post-merger subscriber base of 17M+, EchoStar is considering a combination of contract manufacturers to produce EchoStar receiver designs and licensee's such as Thomson and others to design, manufacture and distribute receivers. The mix of contract manufacturers and potential licensee's to produce receivers has not been decided at this time.

It is possible that certain supplier contracts, as written, will not adequately reflect the annual volumes anticipated by New EchoStar. These contracts may have to be amended to properly reflect the new production levels. It is not anticipated at this time that this would have any impact on other provisions within the contract.

**E. Provide all analyses, assessments or considerations of plans to modify, terminate or enter into new exclusive or non-exclusive distribution relationships.**

There are no plans to modify or terminate any major provisions of EchoStar's existing distribution relationships. It is likely that minor provisions related to product naming, merchandising, advertising co-op and other language will need to be modified to reflect New EchoStar's nature and new brand name.

New EchoStar will succeed to a number of DIRECTV contracts that will have to undergo similar review and modification. Without further review, it is unclear at this time if any substantial changes would be necessary in these contracts.

**XV. Marketing & Econometric Studies and Analyses**

**A. Provide all marketing surveys and studies conducted by or contracted for by the parties, including:**

- 1. Analyses, assessments, or considerations of marketing strategies, including pricing, promotions, programming, advertising, and customer targeting strategies (including targeting of the customers of a competing DBS supplier, customers of cable operators, customers of other MVPDs, and customers who have never subscribed to either DBS or cable services).**

2. **All analyses, assessments, or considerations of the most desirable customers, and sales and marketing strategies to acquire and retain them.**
  3. **Assessments of the extent to which consumers explore both the available cable and DBS (and C-Band) options when choosing an MVPD service.**
  4. **Analyses, assessments, or considerations of competitors, including an assessment of their strengths and weaknesses.**
- B. Provide any studies, analyses, assessments, or considerations that analyze any plans for additional capacity or capacity expansion with regard to DBS, broadband, or other services.**
- C. Provide all econometric analyses conducted by or contracted for by the parties, including, but not limited to:**
1. **DBS Services**
    - a. **Estimates of the demand function for DBS services.**
    - b. **Estimates of the own price elasticity of demand for DBS services.**
    - c. **Estimates of the cross-price elasticity of demand between EchoStar and DIRECTV's DBS services.**
    - d. **Estimates of the cross-price elasticity of demand between DBS and cable services.**
  2. **MVPD Market in General**

X(V) calls for documents. Please see above page 1.

Respectfully submitted,



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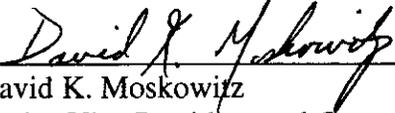
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***DECLARATION***

I, David K. Moskowitz, hereby declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information and belief.

  
\_\_\_\_\_  
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Dated: March 21, 2002

**FCC PUBLIC VERSION**

**Exhibits To March 21, 2002 Letter from Pantelis Michalopoulos,  
Counsel to EchoStar Communications Corporation,  
to William F. Caton, Acting Secretary,  
Federal Communications Commission  
in Response to February 4, 2002 Initial Information and Document Request**

**CS Docket No. 01-348**