Telesat

Telesat Canada

DIRECT-TO-HOME BROADCAST SERVICE BY SATELLITE DISTRIBUTION

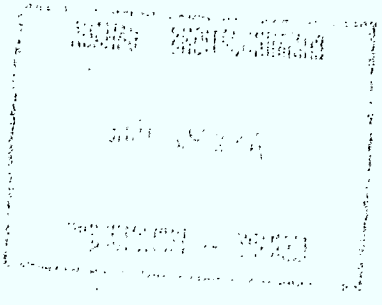
searched 06/86

DIRECT-TO-HOME BROADCAST SERVICE
BY
SATELLITE DISTRIBUTION

pamphlet

SUBMISSION TO:

Broadcasting & Social Policy Branch
Department of Communications
Canada Gazette Notice DGBP-83-1
October 15, 1983



DIRECT-TO-HOME BROADCAST SERVICE
BY
SATELLITE DISTRIBUTION

TABLE OF CONTENTS

January 31, 1984

EXECUTIVE SUMMARY

Telesat believes Canada must move quickly to establish a direct-to-home broadcasting service using its existing 14/12 GHz Anik C satellites, or risk losing an opportunity to reach a long-standing national policy goal. This goal is supplemented by an equalization of services thrust included in the new National Broadcasting Policy which is designed to:

> "Reinforce the national effort to equalize the level of broadcasting services throughout the country by employing all available distribution technologies - including microwave and satellites."

Telesat is offering a business strategy for completing the extension of both basic national broadcasting services and a broader choice of programming for all Canadians. This can be carried out essentially with private sector financing if the service is introduced in a timely fashion before Canadian viewing patterns become entrenched towards programming available from U.S. satellites.

Recent Telesat market research indicates that 55 percent of 1.7 million underserved Canadian households would be likely customers of a direct-to-home service. Furthermore, 80 percent of the underserved market expressing an interest in purchasing a direct-to-home service would prefer a 14/12 GHz over a 6/4 GHz service. This preference is primarily due to the higher cost of 4 GHz relative to 12 GHz home receivers. Therefore, Telesat believes that a new 14/12 GHz direct-to-home service would be complementary to the 6/4 GHz community service currently being offered by CANCOM.

Telesat's studies also indicate that a Canadian direct-to-home satellite service should be provided using Anik C in the "full-power" mode of transmission (i.e., single TV signal per satellite transponder). This transmission mode promises a faster penetration of the underserved market and higher revenues for the service provider, owing to the smaller size and lower price of the home receivers. It provides regional coverage capabilities that can enhance flexibility and overcome time zone problems. Also, 12 GHz frequencies offer freedom from radio interference which facilitates siting of home receivers. Subscribers will further benefit within the next two to three years from substantial reductions in the price of home receiving equipment. These reductions will result from the economies of scale associated with the emerging large world market for 12 GHz receivers.

A 14/12 GHz direct-to-home program package can be delivered to underserved Canadian homes through individual home receivers equipped with 1.2 meter antennas. The installed cost of 12 GHz home receivers, which is estimated to be in the $1000 range, is considerably less than the $3000 to $5000 cost for 4 GHz receivers.

The proposed service concept involves a free "public" tier of national broadcasting services along with two optional subscriber-supported tiers, one of them providing a basic programming package and the other offering premium services. Assuming a $20 per month subscriber fee for the basic tier, the proposed service demonstrates potential for commercial viability and could begin returning profits to the national service provider within four years of start-up.

DES:
See Alain's note. Issue of Telesat participation should be assessed in our discussion paper.

Telesat also believes that the construction of a new high power direct broadcast satellite is not a practical alternative as a market entry strategy. This position stems from the high cost of such a spacecraft, the urgency of the national need and the availability of the Anik C satellites as a suitable transmission medium. Future generations of satellites could involve a movement to higher power and operation in the Broadcast Satellite Service frequency band; however, this would depend on how the market evolves. A decision on the next generation of satellites to follow Anik C would be required around 1986.

Telesat believes the legislative and regulatory framework for the introduction of a new Canadian direct-to-home service is already largely in place. Further, the most rapid and promising means of providing the service would be to create a new corporate broadcasting entity with a broad scope of equity participation. Equity participants could include broadcasters, common carriers, hardware manufacturers, distributors, and others. Each would finance a portion of the start-up costs, contribute business expertise and share in the risks and financial benefits.

Telesat stands ready to play a key role in the implementation of this plan, if authorities see benefits in such a venture. Such participation, however, would require changes to the Telesat Canada Act, since under Section 33, Telesat is expressly constrained from engaging in broadcasting or investing in broadcast undertakings.

Shirley

Thanks for interesting (

The evolution of the satellite telecommunications and broadcasting industries have been rapid since the Telesat Canada Act was passed in 1969. Throughout the world there seems to be a merging of satellite and broadcasting technologies and business arrangements. In light of current policies and conditions, it may now be appropriate for Canadian authorities to review the need for continuation of the constraints within Section 33 of the Telesat Canada Act.

DIRECT-TO-HOME BROADCAST SERVICE BY SATELLITE DISTRIBUTION

1. INTRODUCTION

Telesat Canada is submitting this paper to the Federal Department of Communications in response to the Canada Gazette Notice DGBP-83-1, dated October 15, 1983. The subject being addressed is Direct-to-Home Satellite Broadcasting for Canada, as a means of equalizing the level of broadcast services available throughout the country.

Telesat has been studying extensively the viability of direct satellite delivery of broadcasting services for Canada. Our early work focused on the technical feasibility of direct-to-home[1] television services, particularly with respect to utilizing the Anik C satellite facilities. Subsequent effort focused on market and economic analyses, particularly with respect to instituting a subscription-based service.

The results of our studies indicate that a direct-to-home broadcast service specifically targetted to underserved households has the potential to be a viable commercial undertaking. Details of the market, technical, commercial, and policy aspects of this subject are presented in subsequent sections. More importantly however, Telesat Canada provides an implementation plan and a corporate commitment to market and co-ordinate this plan with interested parties. This commitment extends beyond information sharing and includes possibilities for financial participation by Telesat.

2. MARKET NEED

As indicated in the Gazette Notice, the new broadcasting policy for Canada includes an equalization of services thrust designed to:

> "Reinforce the national effort to equalize the level of broadcasting services throughout the country by employing all available distribution technologies - including microwave and satellites."

Conventional cable television and broadcast distribution systems provide excellent service to urban communities. However, a substantial number of Canadian households in remote and rural environments receive only two or three signals and, in some cases, no television at all. These households are located in areas where the population is too dispersed to economically support cable television or rebroadcast facilities. Therefore, the underserved market can be defined simply as those households which are currently not served or unlikely to be serviced in the future by cable or re-broadcast facilities and those which do not have access to adequate over-the-air broadcast services.

Studies show that this underserved market will consist of approximately 1.7 million households in 1985 and is forecast to increase to 2.0 million by the year 2000(2). Although this group of households represents a sizeable segment of the Canadian population, it is important to assess the actual demand for improved television services. Several market studies have been conducted over the past several years including a study recently commissioned by Telesat(3). The Telesat study indicates that approximately 1.0 million underserved households would be potential subscribers of a direct-to-home service. This group constitutes a sizeable

market representing approximately 12 percent of the total Canadian television market and is approximately twice the size of Canada's largest Community Antenna Television (CATV) system(4). The dispersed nature of this market lends itself ideally to the use of satellite distribution facilities.

3. MODES OF DELIVERY

A direct-to-home satellite service could be introduced in Canada using either C-band (6/4 GHz) or Ku-band (14/12 GHz) satellite facilities. Existing C-band satellites (Anik D) provide total Canada coverage and are used extensively today for television distribution to cable headends and network applications by CBC and CANCOM. C-band satellites typically require 3.0 to 4.5 meter receive antennas which are well suited to commercial applications. However, use of C-band antennas is gaining some acceptance among residential users. Our recent survey indicates that approximately 2 percent of the underserved households in Canada currently have C-band antenna installations.

Although C-band receivers are relatively expensive; costing between $3,000 to $5,000 installed, their attraction appears to be due to the access they provide to a wide variety of American programming on U.S. satellites which is currently available free of charge. Despite this attribute, the availability of C-band receivers has had only a marginal impact on the total unserved market, largely due to the high antenna cost.

In contrast, existing Anik C Ku-band satellites have relatively high transmit power levels and can provide good quality reception into household receiving units with 1.0 to 1.8 meter antennas. The end user cost of this equipment ranges between $1,000 and $1,500. Costs are expected to decline substantially in the future as a result of increasing international demand for Ku-band home receivers. The large U.S. Direct Broadcasting Satellite (DBS) market is expected to mature by 1986-1987 and will have the greatest impact in this regard.

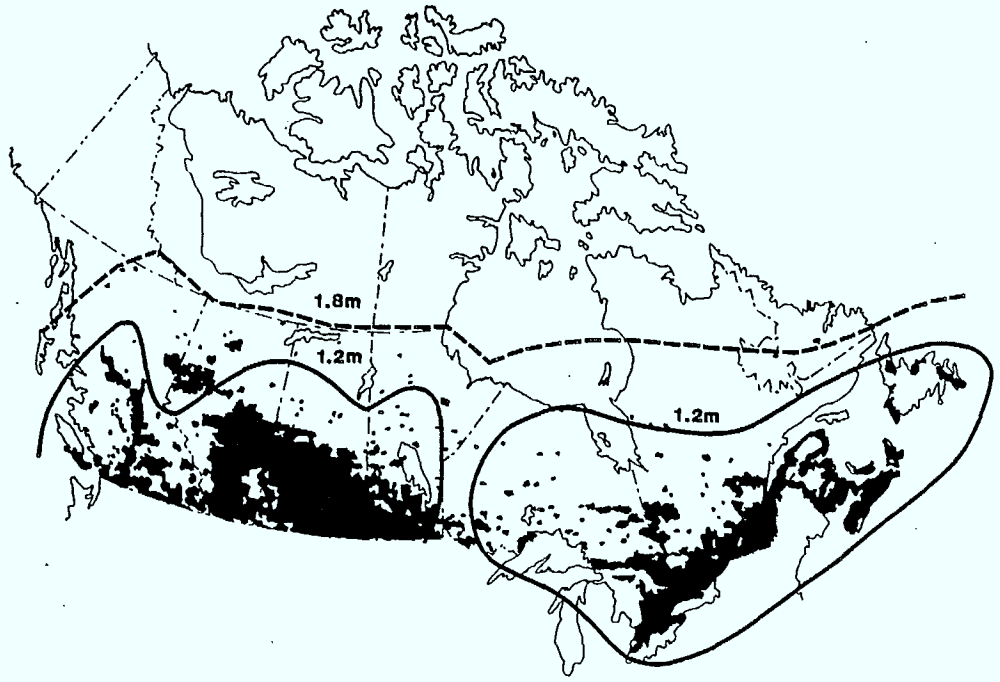
Telesat believes that the use of Ku-band satellites for direct-to-home application offers additional benefits over C-band satellites. These include the ability to provide regional coverage, thereby compensating for time zone differences, as well as freedom from radio frequency interference problems. The Anik C satellites are capable of providing service to much of the north; however, larger receiving antennas similar to those needed for C-band would be required. This situation would affect relatively few households as most northern residents tend to be clustered in community environments that could be served effectively by community distribution systems such as the CANCOM service. This situation could be alleviated through appropriate design of the next generation of satellites.

The Anik C satellite allows for transmission of television signals in either a full power or half power mode. The latter mode involves sharing the available power and bandwidth of a satellite transponder between two separate television signals. This results in a ground receive

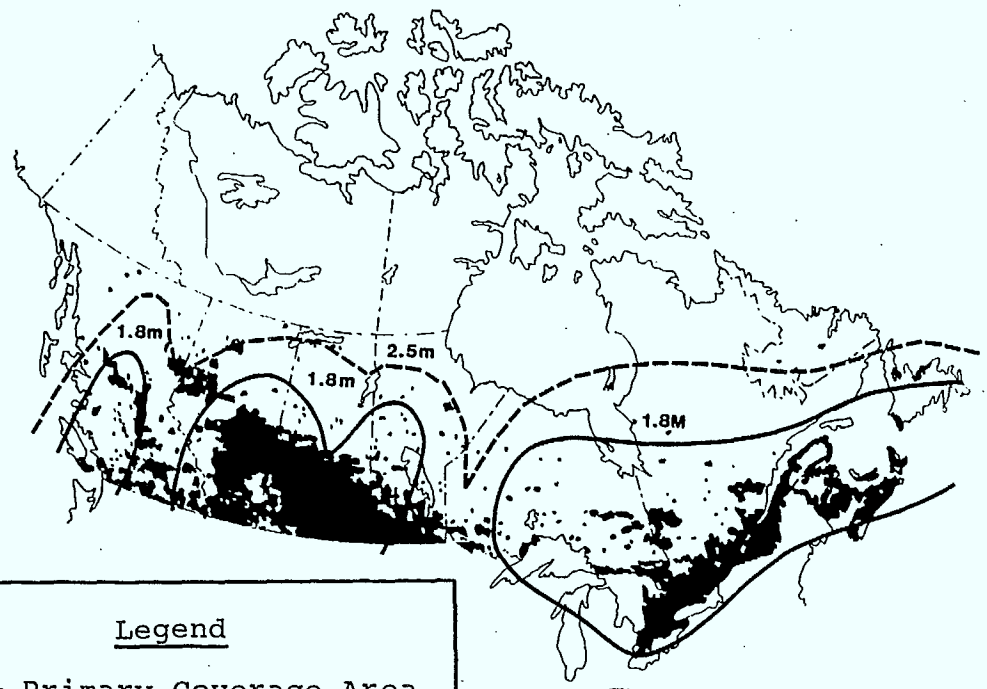
power level 3 to 4 times lower than the full power mode, where the entire channel is dedicated to a single television signal. Consequently, operation in the half power mode requires the use of larger receive antennas in the 1.8 meter range. By comparison, the full power non-shared mode could service most of the underserved market with lower cost 1.2 meter or smaller antennas. The beam coverage areas for the half and full power modes and the associated antenna size requirements are shown in Figure 1.

Figure 1

BEAM COVERAGE FOR FULL AND HALF POWER MODES



TYPICAL ANTENNA COVERAGE
FULL POWER MODE



TYPICAL ANTENNA COVERAGE
HALF POWER MODE

Legend

——— Primary Coverage Area
- - - Secondary Coverage Area
Population Density in Underserved Market

As the beam coverage diagrams indicate, operation in the half power mode provides somewhat reduced coverage in certain regions of Canada which require larger 2.5 meter antennas. Telesat estimates that in 1985, 200,000 households or 12 percent of the underserved market will be in these areas of reduced coverage. The larger antenna and its higher cost may deter these households from adopting a direct-to-home satellite delivered service. In addition, high volume production of these larger antennas will not occur to the same extent as the smaller size antennas and a disproportionately higher price would result.

Although the half power mode has disadvantages with respect to the size of the home receiver antenna and coverage area, there are strong offsetting advantages. Satellite lease charges are reduced by 50 percent since operation in the half power mode utilizes one half of the available transponder power for each television signal. This would reduce the overall satellite lease charges to the service provider for delivering a multi-channel direct-to-home program package. In addition, the Anik C satellite has a finite number of available transponders (i.e., eight in Western Canada and eight in Eastern Canada). Operation in the half power mode would allow a maximum distribution of 16 television programs to either Eastern or Western Canada on one satellite. This compares to a limit of eight programs using the full power mode.

In order to determine a preferred mode of operation, the above advantages of lower satellite lease charges and additional programming capability must be traded-off against the smaller antenna requirements of the full power mode. The Telesat market study, as discussed in Section 4, further addresses this specific issue.

An additional important consideration is the current availability of satellite channels at Ku-band. Telesat plans to have three Anik C satellites in service by the end of 1984. Anik C1 will be used primarily for telecommunications applications, such as long distance telephone and private business networks. Anik C3 will be used for broadcast applications which include distribution of pay and educational television signals to cable headends. Anik C2 is providing service to the United States for direct-to-home applications until year-end 1984. Commencing in 1985, Anik C2 will be available and could be used in conjunction with Anik C3 to provide a domestic direct-to-home broadcast service for Canada. These two satellites could be specifically dedicated to this purpose until replacement follow-on satellites are required around 1990. Therefore, sufficient Ku-band satellite capacity will be available in 1985 to institute a direct-to-home broadcast service in Canada.

Telesat currently does not consider the construction of a new high power DBS system as a viable option to meet the existing underserved market need. The large front-end investment renders this approach impractical as a market entry strategy relative to the use of existing Anik C facilities. The costs of a high power DBS system would be warranted only if the market were expanded to include urban households. Telesat believes that the Canadian urban markets are being well served at this time by cable and broadcast systems.

Currently, Telesat is actively planning for its next generation of satellites to follow Anik C and Anik D. Two transition scenarios have been postulated with respect to

the direct-to-home broadcast service, and others may follow. In the future, direct-to-home services could be transferred to either a new Fixed Satellite Service (FSS) similar to Anik C but with improved features, or a Broadcast Satellite Service (BSS).

Transition to a BSS system implies higher transmit power and, therefore, an increased facility cost per television channel. In addition, it implies system changes such as the use of circular polarization and a change from the FSS to the BSS frequency band. Careful system planning at the outset can ensure that any direct-to-home system instituted on Anik C is cost-effective in the short term and compatible with future follow-on satellite options. Decisions on the next generation satellite to replace Anik C will have to be made by 1986 and will address the results of joint planning efforts between Telesat and the broadcast industry.

Also, Telesat is presently considering the merits of a Multiplexed Analogue Component (MAC) system for the introduction of a direct-to-home broadcast service. A MAC system could offer an initial service which is slightly superior to a National Television Standards Committee (NTSC) format. This format could be compatible with the conversion to a two-channel, true High Definition Television (HDTV) mode of transmission in the future. The undeveloped state of direct-to-home television distribution in Canada offers an excellent opportunity to introduce the benefits of such new technology right at the beginning, thus avoiding the need to carry out costly retrofitting of established facilities.

4. TELESAT MARKET STUDY

The Department of Communications has commissioned several studies of the underserved market in Canada. These studies addressed a wide range of topics including the size and extent of the underserved market, demographic profiles and estimates of demand and price sensitivity. Telesat has used a large part of this information in its early commercial viability assessments of a direct-to-home broadcast service.

Although this data base is quite comprehensive, it does not address the concept of a subscription-based direct-to-home satellite service. Telesat recently commissioned a separate, independent market research study conducted by the Nordicity Group and the Environics Research Group[3] to investigate this type of service concept. The purpose of the Telesat study was to assess the overall market demand for a subscription based direct-to-home service, obtain specific information on user preference for C-band and Ku-band modes of delivery, and assess the impact of full power versus half power operation in the Ku-band.

Details of the three service options analysed in the Telesat market study are summarized in Table 1. The Ku-band full power option utilizes Anik C facilities and provides an eight television channel service to both Eastern and Western Canada. This option provides the lowest unit cost for the home receiver by virtue of the 1.2 meter antenna. The Ku-band half power option also uses Anik C and provides additional program channels at the expense of a more costly 1.8 meter home receiver. The

final option is a C-band service similar to that now offered by CANCOM. For the C-band option, subscribers would receive the Canadian service and in addition, could re-point their home receiver antennas in order to obtain numerous existing television signals available on U.S. C-band satellites.

TABLE 1

SATELLITE DELIVERED SERVICE OPTIONS

	Ku-BAND FULL POWER	Ku-BAND HALF POWER	C-BAND
Number of Channels	8	16	8 (+U.S. Channels)
Receiver Antenna Size	1.2m/4ft.	1.8m/6ft.	3.0m/10ft.
Home Receiver Cost			
Current	$1,000	$1,500	$2,500
Future	$ 600	$1,000	$2,000
Installation Cost	$ 100	$ 150	$ 500
Monthly Subscription Fee	$ 20	$ 20	$ 20

The following study results are based on responses received from a nationally representative sample of 600 households selected randomly from rural and remote areas of Canada.

- 70 percent indicate some level of dissatisfaction with current television services.

- 55 percent indicate some level of interest in purchasing or leasing receiving equipment assuming an acceptable price level and program package.

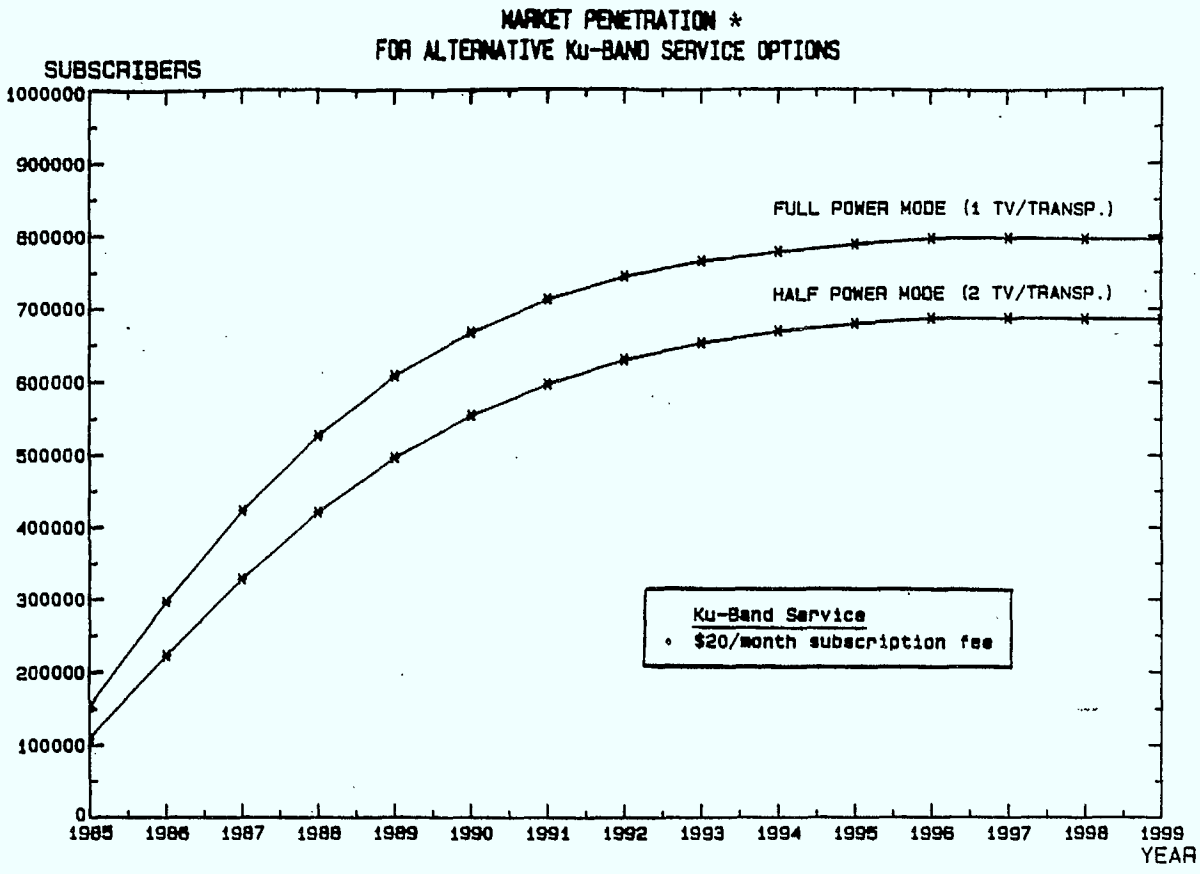
- 80 percent of those interested in a direct-to-home service indicate a preference for Ku-band service over C-band service despite the availability of free American programs on U.S. satellites.

- The full power mode would lead to a faster penetration of the underserved market due to lower receiving antenna costs. The market penetration for the half and full power mode is shown in Figure 2.

The study results clearly indicate a preference for Ku-band service. However, the slower penetration rate associated with the half power mode of operation is an insufficient argument for it to be completely discounted as a possible mode of operation. Further analysis was carried out to determine a preferred operating mode on an economic basis from the perspective of a direct-to-home service provider.

The market penetration curves shown in Figure 2 were used to calculate potential revenue for a commercial direct-to-home service provider. The resulting revenue potentials are compared on a present worth basis in Table 2.

Figure 2



Footnote: (*) Projections reflect the market share achieved by a Ku-band service when offered simultaneously with a C-band service.

TABLE 2

PRESENT WORTH OF REVENUE FOR Ku-BAND OPTIONS
($1984)

	FULL POWER MODE	HALF POWER MODE
Number of Channels	8 East - 8 West	16 East - 16 West
Receiver Antenna Size	1.2m/4 ft.	1.8m/6 ft.
Present Worth	$658 Million	$556 Million

The operating mode with the highest revenue potential would appear to best support a commercial direct-to-home service, given that the total satellite facility costs associated with each operating mode are essentially equal. In this case, the full power mode of operation is the preferred choice and has the greatest potential for commercial viability. A thorough examination of the costs and revenues associated with this mode of operation is provided in Section 6.

5. PROPOSED PROGRAM SERVICES

An attractive program package must be provided in order to encourage the underserved market to participate in a subscription-based direct-to-home service. This package should contain distinctly different program services comprised of a balance of Canadian networks, educational services, premium services and some U.S. services. Most of these services are assumed to be available essentially free of charge to a direct-to-home service provider as is currently the case in the CATV industry. The exception would be in the cases of Pay and Specialty services.

A proposed allocation of direct-to-home channels is provided in Table 3 based on Anik C operation in the full power mode. This allocation was prepared for discussion purposes only and represents the type of program package which Telesat believes is necessary to successfully introduce a direct-to-home service in Canada. The proposed package contains three tiers of service; a free public service tier, a subscription supported basic tier and a discretionary premium service tier. Again, these services closely resemble a typical CATV service offering.

The free public tier would consist of an English and French CBC service. Telesat believes that the CBC has a special role to play in extending its service to all Canadians. The program signals would be unscrambled and available to any household that purchases a receiving antenna. This service tier would not be part of any commercial arrangement between Telesat and the direct-to-home service provider. The public tier would result from a direct CBC contract with Telesat for satellite channels.

The subscription supported tier would consist of English and French educational services, independent Canadian networks and some U.S. network services. These services would be scrambled by the direct-to-home service provider and households subscribing to this service would require a decoder. For this tier, the service provider will supply the decoders and incur the costs of leasing the associated satellite channels from Telesat.

Cost sharing agreements would be arranged between the direct-to-home service provider and those existing broadcast entities that are currently distributing satellite television services to cable headends. This would encourage these entities to convert their service from the half to the full power mode of operation. Also, the service provider would incur the full cost of satellite channels for new program services which would be directed specifically to the direct-to-home market.

PROPOSED CHANNEL ALLOCATION ON TWO ANIK C SATELLITES

(All channels in the full power operating mode)

PROGRAMMING TIERS	SATELLITE			
	ANIK C2		ANIK C3	
	WEST BEAM	EAST BEAM	EAST BEAM	WEST BEAM
PUBLIC SERVICE TIER (NO CHARGE)	1 RADIO CANADA	1 RADIO CANADA	1 CBC	1 CBC
BASIC TIER ($20/MONTH FEE)		1 EDUC. FRENCH 1 INDEP. FRENCH 1 INDEP. FRENCH	1 EDUC. ENGLISH 2 U.S. NETWORKS 2 INDEP. ENGLISH	1 EDUC. ENGLISH 2 U.S. NETWORKS 2 INDEP. ENGLISH
DISCRETIONARY PREMIUM TIER (VARIABLE FEE)	1 PAY FRENCH 1 SPECIALTY	1 PAY FRENCH 1 SPECIALTY	2 PAY ENGLISH	2 PAY ENGLISH

TABLE 3

The premium service tier would consist of English and French Pay-TV and perhaps some specialty television services. The direct-to-home service provider would charge an additional fee to subscribers who wish to receive all or some of these services. The revenue sharing arrangement would be identical to those which currently exist between the Pay-TV and CATV operators. Since the existing premium services on Anik C are also being distributed to cable headends, some form of cost sharing for the satellite channels would be expected between the direct-to-home operator and the Pay-TV operator to encourage conversion to the full power mode of operation.

It is important to note that the total program package exceeds the available capacity on a single Anik C satellite. Therefore, the services are split between Anik C2 and Anik C3. French services are assigned to Anik C2 and English services are assigned to Anik C3. Households that wish to view both English and French services would have to either manually re-point the antenna to the appropriate satellite, or purchase an antenna rotor to perform this function. This problem can be alleviated in subsequent generations of satellites through appropriate design to allow an English and French service on one satellite.

6. COMMERCIAL VIABILITY ASSESSMENT

Telesat believes that a direct-to-home service must be commercially viable with sufficient revenues to cover costs and provide a reasonable rate of return on investment. Telesat's commercial viability assessment of a direct-to-home service is based on the provision of the

program service outlined in the previous section. This comprehensive analysis attempts to include all capital costs, expenditures and revenues that a service provider would incur to provide a direct-to-home broadcast service. The resulting cash flows are projected to the year 2000 and capture the costs associated with Anik C operation and a follow-on replacement satellite system. This approach ensures that the service is viable in both the short and long term.

A hypothetical broadcast entity, named "Company X," was assumed to operate the direct-to-home satellite service in the same manner as a cable system. This implies that there would be a monthly subscription fee and a connect charge for the service. In addition, Company X would receive revenues for any premium services such as pay-TV. In order to effectively collect subscription revenues and provide overall administration of the service, Company X would scramble the program package and provide decoders to individual subscribers(5). With the proposed service arrangements, this scrambling system would become, in effect, a national standard common to both cable headends and direct-to-home reception.

Company X would incur substantial expenditures to establish and maintain a direct-to-home service. These include:

- Satellite RF channel charges and uplink costs payable at tariff to Telesat. Fourteen RF channels are required to provide the service which include the effects of cost sharing arrangements with existing broadcast undertakings currently on Anik C.

- Capital costs for coding/decoding and billing equipment
- Operational expenses for maintenance, sales and promotion
- General administration costs for billing, management, premises, etc.

A discounted cash flow analysis in which revenues are compared to costs over the 15 year life of the study yields a good measurement of commercial viability. The most important figures of merit in this type of analysis are net present value and payback period.

Net present value (NPV) is the net difference in the present worth of all cash inflows (i.e., revenues) and cash outflows (i.e., expenses). A positive NPV indicates that the proposed service would provide a fair return to investors. With a more positive NPV, the proposed service becomes more attractive. Also, there is a reduced investment risk and a higher safety margin to offset unexpected cost increases or reductions in market penetration.

The other important figure of merit is payback period, which is the period of time required for the proposed service to generate a positive cash flow on a yearly basis. Most new services are not profitable from the time of introduction. A period of time is required to establish a sufficient revenue base that will cover costs, including the cost of borrowed funds needed to establish the service.

The economic parameters used in the discounted cash flow analysis, (i.e., rate of return on investment and inflation) are consistent with service industry business proposals having an element of financial risk. A conservative view of the market is taken to reflect a realistic revenue potential. To reflect this view, it is assumed that the $20/month subscription fee and the connect charges are held constant for the entire 15 year life of the study. These fees were not subject to price increases, although all operating costs were adjusted for the full effects of inflation. This scrutinizing approach ensures a high level of confidence in the results.

The results in Table 4 demonstrate that a direct-to-home satellite service using the full power mode has the ability to recover costs and provide an excellent return to investors over a relatively short period of time.

TABLE 4

NET PRESENT VALUE/PAYBACK PERIOD FOR
Ku-BAND FULL POWER MODE

Net Present Value Achieved Over 15 Years	$90 Million
Payback Period (From time of service introduction)	3.7 Years

In addition, our sensitivity analysis shows that this service can withstand considerable variances in expected revenues and costs and still maintain a fair return on investment in the order of 16 percent. It appears, therefore, that the proposed direct-to-home service is commercially viable and is worthy of private sector investment consideration.

The main element of risk is the high start-up costs associated with establishing such a service. Although payback occurs over a relatively short period of time, initial funding requirements would be approximately $45 M. This financial risk would be reduced by forming a consortium of interested groups, each assuming some portion of the start-up financial requirements. This approach forms the basis for Company X and is further addressed in the implementation section entitled "Telesat's Role."

7. POLICY ISSUES

Telesat believes that the legislative and regulatory framework for a direct-to-home satellite service is largely already in place. Since a direct-to-home service is a broadcast undertaking, the service providing entity or Company X, would abide by the statutory provisions of the Broadcasting Act and require a licence from the C.R.T.C.

Outside the realm of legislative and regulatory considerations, there are several policy and institutional issues related to establishing a direct-to-home satellite service. The main issues are the effects on the existing CANCOM service and the necessary timing for the introduction of a direct-to-home service.

Telesat believes that CANCOM and a direct-to-home Ku-band service can co-exist and be complementary because each service addresses a distinctly different market. Telesat's commercial viability analysis of a direct-to-home service specifically excludes the CANCOM community market(6) and that segment of the direct-to-home market which indicated a preference for

C-band service. After discounting the market for these factors, a sufficient market base still exists to support a Ku-band commercial direct-to-home satellite broadcast service. Therefore, Telesat believes that a scenario where CANCOM and Company X co-exist is the best means of equalizing broadcast services to all Canadians. Further, CANCOM may wish to participate in Company X since a direct-to-home service is closely related to their existing business.

Finally, a matter of crucial importance to the successful implementation of direct-to-home satellite services in Canada is that it must be done in a timely manner. In light of the rapid development of DBS services in the United States, Canada must move quickly to implement its own direct-to-home satellite delivered system. The system should be tailored to meet Canadian needs and provide Canadian programming. The establishment of a Canadian system will contribute to the development of Canadian viewing patterns now, before these patterns become entrenched and focused exclusively upon foreign sources. In view of Canada's proximity to the U.S. and the spillover effects of satellite broadcast systems authorized in the U.S., a sense of urgency has presented itself. This urgency, coupled with the availability of the Anik C satellites, creates an opportunity to introduce a domestic, direct-to-home satellite delivered service that could develop under Canadian guidance, ownership and initiative to meet Canadian needs.

In summary, Telesat believes the necessary legislative and regulatory framework is in place for the introduction of a direct-to-home service. Such a service would not adversely affect the CANCOM service. A timely service

introduction is required to allow a Canadian service provider to meet domestic needs and protect it from erosion by U.S. DBS systems. This erosion would preclude a privately financed Canadian domestic direct-to-home service from ever being established on a commercial basis.

8. TELESAT'S ROLE

The size of the underserved market warrants the creation of a separate broadcast entity with a special mandate to provide a level of service comparable to that enjoyed by residents in urban centres. The distribution and servicing of home receivers to such a dispersed market, combined with the substantial start-up costs, are major challenges which must be overcome by such a broadcast entity. A joint venture of Canadian organizations currently engaged in the provision of broadcast facilities and services appears to be the most effective medium for meeting these challenges. This approach, which is being adopted in the United States to implement their direct-to-home services, allows for the combining of the technical, marketing and financial resources currently resident with the various participants and is indispensable to the success of such a venture.

Telesat, in its current role as a telecommunications carrier, is prepared to make its facilities available under tariffed leases to the operators of Company X or its equivalent. With a view to encouraging the establishment of the broadcast undertaking, Telesat would like to offer more active participation. However, under Section 33 of the Telesat Canada Act, Telesat is expressly constrained from engaging in broadcasting or investing in a broadcast undertaking.

If the government believes that such a venture has merit within the context of Canada's broadcasting policies, and that Telesat's participation would be desirable in a role other than that of a bystander, changes would be necessary to the Telesat Canada Act. The evolution of the satellite telecommunications and broadcasting industries have been rapid since the Act was passed in 1969. Throughout the world there is now a merging of satellite and broadcasting technologies and business arrangements. In light of current policies and conditions, it may now be appropriate for Canadian authorities to review the need for continuation of the constraints within Section 33.

9. CONCLUSIONS

Extensive market research studies have consistently confirmed a strong need for equalization of broadcasting services throughout Canada. There are approximately 1.7 million households which receive less than two or three television signals. This underserved market is expected to increase to over 2.0 million households by the year 2000.

Market surveys of households in the underserved regions of Canada show a high level of interest and acceptance of satellite delivered broadcast services. Seventy percent of the surveyed households show a need for improved television services and 55 percent are identified as potential buyers of satellite receiving equipment. Of those households interested in a direct-to-home satellite service, 80 percent preferred a Ku-band service as compared to a C-band service by virtue of the lower home receiver costs.

The commercial viability of the proposed service was assessed on the basis of a comparison of the total expenses and expected revenues over a period of 15 years. The results indicate that the proposed service has the potential to be commercially viable and provide an attractive rate of return to investors.

Telesat believes that the creation of a new broadcasting entity such as Company X is the most effective means of implementing a commercial direct-to-home satellite service. This entity would be comprised of a broad scope of equity participants as a major source of funding and expertise. Telesat would be prepared to participate in such a broadcasting entity, however, this would require changes to Section 33 of the Telesat Canada Act. In light of current policies and conditions, it may now be appropriate for Canadian authorities to review the need for the continuation of the constraints within Section 33.

10. APPENDIX

Footnotes:

(1) Direct Broadcasting by Satellite or DBS has become a generic acronym in the communications industry, referring to the direct reception of broadcast signals by individual households. A true DBS service, by international standards, operates from a broadcast satellite with EIRP values of 53-63 dBW and, for the most part, in a 12.2-12.7 GHz frequency band. By comparison, the existing operational satellites capable of providing a direct broadcast service have lower EIRP values of 40 - 50 dBW and operate in the 11.7-12.2 GHz frequency band. In order to differentiate the two types of satellites, Telesat Canada refers to the former as a true DBS service and the latter as a Direct-to-Home Broadcast Satellite Service.

(2) The projection has been based on Statistics Canada and CMHC data. Different population growth rates for urban and rural areas in various provinces were taken into account.

(3) Telesat Canada market research study "Demand Analysis for a Subscription-Based Direct-to-Home Television Service," January, 1984

(4) Matthew's CATV Cablesystem Listing.

(5) Telesat Canada technical analysis, "Scrambling System Requirements for Broadcast Signals."

(6) CANCOM's original licence encompassed rural and remote communities of more than 1,000 population. A recent revision to this license has allowed CANCOM to service communities with a population of 300.

DI
SA