Direct Broadcast Satellites and the Social Shaping of Technology: Comparing South Korea and Canada

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Abstract: Questions about the social shaping of technology are explored by comparing direct broadcasting satellite policy in two very different countries. Canada has a vast geography, low population density, extreme ethnic and linguistic diversity, and close proximity and long-time cooperation with its neighbour, the United States. South Korea is centralized around Seoul, has a high population density, is relatively homogenous culturally and ethnically, and has a history of conflict with the country sharing a common border. The specific goals set for satellite broadcasting arising from these differing national contexts are explored. The paper also compares services and audiences in South Korea and Canada, and it asks what these cases can illustrate about the relationship between industry, policy, audiences, and the shaping of a new media technology.

Résumé : Nous explorons la formation sociale de nouvelles technologies en comparant les politiques sur les satellites de radiodiffusion directe dans deux pays très différents. Le Canada a une vaste géographie, une population à faible densité et une très grande diversité ethnique et linguistique et il collabore depuis longtemps avec son voisin très proche, les États-Unis. La Corée du Sud, en revanche, est fortement centralisée autour de Séoul, densément peuplée et homogène tant du point de vue culturel qu’ethnique et elle partage une histoire de conflits avec son voisin du nord. Nous explorons les objectifs spécifiques pour les satellites de radiodiffusion directe fixés dans ces contextes nationaux différents. Nous comparons aussi services et publics en Corée du Sud et au Canada, et nous demandons comment ces cas peuvent illustrer le rapport entre industrie, politique, public et la formation d’une nouvelle technologie de communication.

Keywords: Broadcasting policy; Media/mass media; Technology theory; Satellite; Regulation; Comparative studies; South Korea

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Introduction

Direct satellite broadcasting was initially seen as a technology that would, because of its broad geographic coverage, break down national borders and create transnational audiences for television programming. Its effects were portrayed as relatively similar in very different contexts (Webster, 1984). However, the trends of program fragmentation and audience segmentation that have typified the multi-channel television industry have also occurred with direct broadcast satellites, and much national programming has remained distinct. As Straubhaar (1991) has argued, audience preferences for programming that is cultural and linguistically proximate have contributed to the development of strong regional markets in television programming. Several countries, such as India and China, have also attempted to use direct broadcast satellites as tools for building a national broadcasting space, rather than assuming these distribution technologies are only of transnational significance (Chan, 1994; Melkote, Shields, and Agrawal, 1998; Pashupati, Sun, and McDowell, 2003). Alongside the new research emphasis on identifying national policy approaches to the use of direct broadcast satellites, there is also a need to identify public policy and industry strategies for different segments of the television industry, and how satellite technologies and services have been shaped by and fit in with existing media policies, industry structures, and usage patterns. This includes policies shaping activities such as content creation, program distribution, funding models, and promoting certain audience compositions and media usage habits. What do these efforts tell us about the social shaping of new media technology?

This paper addresses the challenges, conditions, and goals of direct broadcast satellite policies and industry developments in the Republic of Korea and Canada. It compares the conditions and challenges facing this sector in each country, including unique conditions posed by the geographic configuration of each country, the linguistic and cultural composition of the population, and the organization of media industries. Canada has a vast geography, a low population density in much of the country, and most of its population is spread along the border with the United States. There are two official languages, French and English, but the population is extremely diverse in its ethnic composition. Canada has close proximity and a long-time cooperation with its neighbour, the United States. At the same time, creating and maintaining a national cultural space in the face of the large English-language communication and cultural production in the United States remains the core challenge for Canadian communication policies. In comparison, the economy and cultural life of South Korea are centralized around Seoul. The country has a high population density and is relatively homogenous culturally and ethnically. It has a history of conflicts and ongoing tensions with the country with which it shares a common land border (North Korea) as well as with Japan, the closest country by sea.

The paper also examines the similarities and differences of services and audiences in South Korea and Canada by drawing upon documents from the public sector, industry groups, and news reports. It asks what these patterns can illustrate
about the relationship between policy, industry, audiences, and the shaping of
technology. The specific goals set for satellite broadcasting arising from differing
national contexts are explored, as are the differing position and importance of
direct broadcast satellite services in national media policy. After discussing the
policy debates regarding satellite broadcasting in each country, the paper asks
whether comparing the experiences of each country can assist in better under-
standing the industry and policy choices that can shape the development and con-
figuration of satellite broadcasting. What lessons can be learned about the shaping
of media technologies by comparing two countries that differ in very significant
respects?

Comparing broadcast distribution technologies and systems
Direct satellite broadcasting and the World Wide Web (or the Internet) are two
communication networks that have come to symbolize the series of technical, eco-


omy, and cultural changes that have taken place in the past two decades, but
especially in the 1990s. Since both of these technical networks are most effec-
tively used carrying digital signals, they provide a means for distributing content
from multiple media formats, whether text, graphics, audio, or audiovisual media.
They differ in significant respects from existing electronic media and electronic
networks and from each other in terms of bandwidth, modes of connectivity,
industry organization, and predominant uses or service offerings (Baldwin,
McVoy, & Steinfield, 1996; Straubhaar & Larose, 2002) as well as in the ways in
which industry structures and communications policies have been designed for
each type of medium.

Useful points of comparison for direct broadcast satellite (DBS) networks are
the existing audiovisual programming distribution systems as well as the services
available on the World Wide Web. These include terrestrial broadcasting, cable-
television networks, and distribution technologies such as video cassettes or
digital video discs (whether sales or rentals) that also allow people to gain access
to audiovisual programming. In each case, the factors important in understanding
the development of a medium in a specific time and place, and the challenges
faced by communication policies, include network technologies, existing public
policies, industry structures, and audience composition and media uses.

To understand the development and use of these new technologies, many
commentators have focused upon the possibilities that digital technologies offer.
Among the advantages of digital media are the lower cost of transmitting signals,
the increase in bandwidth or carrying capacity due to the compression of digital
files, the ability to carry multiple media formats, and the ability to store, manipu-
late, and retrieve digital files (Baldwin et al., 1996). This opens up the possibility
of digital media systems that cross space more easily, offer more power and
control to users, and increase the difficulties for states to control the movement of
information across borders and for governments to regulate different media
sectors or to regulate media in a thorough-going way. As a result, DBS may have
significant implications for change in national broadcasting systems.
The theoretic starting point of this paper draws from the approach called the social shaping of technology. This view of technology change stands in sharp contrast to arguments that the new technology is the sole driving force for change in industry, policy, and cultural practices and institutions. The approach focuses upon ways in which existing political, social, and economic institutions shape the development, deployment, and use of new technologies. Several insights illustrate the importance of this analysis.

David Edge (1995) provides a comprehensive discussion of the social shaping of technology perspective. He argues that social shaping takes place at various points in the cycle of the development of new technologies. Not only are design and development of what we call “technology” shaped by the goals and purposes of powerful public- and private-sector organizations and institutions, the deployment of technologies is also shaped by investment decisions and strategies of organizations. Robin Mansell (1993) provides an analysis of how firms in the 1980s and 1990s acted strategically to design digital telecommunication network and switching technologies in such a way as to try to retain the high value-added activities and services on the network for themselves, while reducing the range of control of these activities by users. Similarly, Lawrence Lessig (2000) argues that the choices made in design of technology interfaces and protocols have supplanted in importance some of the policy decisions usually made in policy discussions and public regulation. Networks may be designed using open systems or proprietary systems, for instance, and this will affect the ability of other service providers and users to make use of certain network services or potentially to compete with incumbent network or service providers.

Existing media systems, such as terrestrial broadcasting, cable television, or the Internet, need to be viewed in a similar light. They are in place not as the full-fledged realization of technological possibilities, but rather represent the outcome of historical bargains among the public sector, the private sector, and audiences on the appropriate coverage, content, pricing, and use of media technologies and systems. These relationships may become stable, but also may be disrupted by a number of changes, including new financing and marketing strategies, new content formats to reach different audiences, and the adoption and use of new technologies in program production, distribution, or reception.

As Roger Fidler (1997) notes, new media technologies are introduced into a context of existing technologies. Not only does the use of new technologies by service providers and users disrupt the existing arrangements and practices, these pre-existing media also shape the ways in which new technologies are applied, the choices about the places and populations to which they are deployed, and the use to which they are put. The social shaping approach taken here, then, argues that the most relevant actors and institutions that should be examined to understand the development of DBS are those shaping the audiovisual program production, distribution, and use of media systems that are already in place. This paper focuses upon the technical, economic, and policy contexts as represented by existing
audiovisual media, arguing that these provide the most appropriate ways of understanding the deployment and use of DBS technologies.

Terrestrial broadcasting requires investments in specific geographic areas for broadcasting antennae, uses a high bandwidth of the radio magnetic spectrum with analogue signals, and has a limited geographic range of service (although a signal may cover a large urban area). The distribution infrastructure to reach audience members may be owned by the same companies that also produce the content. The technical difficulty of denying service to a specific audience member who might not want to pay to receive a signal means that off-air or terrestrial broadcasting has most often been supported either by public subsidies or by payments from advertisers and others that want to reach television audiences. Since the broadcast signal has a defined geographic coverage, audiences are often defined in terms of a service area or geographic market. The limited geographic coverage of broadcast television signals has meant that this technical network has fit in well with public-policy efforts to promote a national broadcasting policy or localism in broadcasting.

The technical limitations in the coverage area, along with the local basis of some advertising expenditures, have also been used in the United States to justify a policy of localism in broadcasting. As Robert McChesney notes (1993), a policy of localism has been part of the rhetoric of broadcasting policy in the United States, even in the face of an industry structure that organized program production and distribution in networks.

In his study of the development of the cable-satellite distribution system in the United States, Patrick Parsons (2003) concludes:

The idea of, and concrete proposals for, a cable-satellite system, in short, arose logically from prior technical, economic, and regulatory development. Social structures in place at the time helped constrain and guide development. Costly terrestrial distribution options motivated cable operators and broadcasters to look to satellites, while changing FCC [Federal Communications Commission] policy with regard to satellite ownership and smaller critical issues, such as allowable dish size, served to channel and regulate the pace of development. Within the given set of social and economic parameters, a multitude of players, … each with their own resources and agendas, engaged in a process of contestation and negotiation. (2003, p. 14)

The technical characteristics of coaxial cable have several implications for its use. Cable-television distribution requires a significant investment on a per-subscriber basis in a wired infrastructure, since the network must connect physically and directly with each subscriber. This has meant that cable distribution is most cost-effective in high-density urban areas. Coaxial cable offers tremendous bandwidth or carrying capacity, so that programming from many different providers could be distributed on the same cable system. Hence, in most cases the cable distribution system is owned by a different organization than the program provider, and a single cable distributor packages various programs to offer to subscribers. Since the cable-television network must connect physically with each subscriber, it has been technically possible to require a payment from each user or subscriber.
However, since programming signals are distributed to the whole network, signal scrambling and descrambling devices have been added to differentiate among service packages available to different subscribers. It is possible with addressable converters to deny some services to some subscribers, and to allow providers to sell different packages of services or even pay-per-view services to other subscribers, each of which would have an addressable converter or signal descrambling device. Although originally used for the broadcast distribution of analogue signals, cable-television networks and descrambling devices may also be upgraded to carry digital signals without replacing the entire wired network. The use of digital signals allows for signal compression—and the possibility of providing even more audiovisual services. Upgrades to the cable network itself as well as additional connection equipment (cable modems) may also allow it to be used as an access point for Internet services.

The industry structure for cable television includes both infrastructure provision and program provision. Since infrastructure or network providers originated as local companies in some countries, especially those with stronger local governments, these networks were initially seen as opportunities to provide more local programming—and access for local program producers to local audiences. With industry consolidation, and more “multiple system operators” in the cable business, the local industry connection has been maintained more by franchises with municipalities than by the industry structure. The mode of distributing signals to cable systems from program producers via satellite distribution has also allowed cable programmers to build a viable audience by covering wide geographic areas and seeking small audience segments in different geographic markets. The fragmentation of audiences into narrower and narrower interest segments, which resulted in part from the use of subscription fees rather than advertising revenues, but also from strategies to enhance audience definition and increase advertising revenues, has also led to a programming industry for cable television that is even more detached from specific local roots.

Although not part of the electronic broadcasting system, audiovisual media such as video cassettes and digital videodiscs also serve as media to distribute audiovisual programming. Users may choose to rent a video or DVD for a specific length of time or to purchase a copy, which allows them unlimited private use. Video cassette recorders (or digital recording and playback devices) may also be used by audience members to record broadcast signals and play them back at a different time. Video rentals and sales are part of an integrated marketing plan for film distributors, a plan that may also include television broadcast and pay-per-view services. Since video sales and rentals do not require distribution on high-cost networks, they may offer modes of access for programming of interest to individuals or smaller groups of viewers that are not economically desirable targets for broadcasters.

There are fewer policy limitations on the video rental and sales industry that shape program distribution. Although there may be legal limitations on program content, these may be less restrictive than those faced by broadcasters. Since there
are lower investments of fixed costs than in network industries, there are fewer barriers to new entrants. However, the relationships between the program providers (motion picture studios) and the video rental and sales shops may provide some volume discounts or exclusive contracts that limit the access of some rental and sales providers to programming.

So far, Web technologies have been used most often for interactive applications, where the user is fundamentally involved in creating content (Web publishing, e-mail) or in determining content in a real-time basis interaction. The ability to contact multiple Web site publishers, which is built into the network switching structure, as well as similar upstream and downstream bandwidth capacities, allows for interactive activities and uses but limits the reception of high-quality high-bandwidth services, such as video streaming. Although wireless Web applications are available and are being used in many countries, these have primarily been low-bandwidth applications to their point.

It is into the technical, economic, and policy contexts of existing audiovisual distribution technologies that new services such as high-frequency digital direct broadcast satellites have been introduced in the late 1990s and early twenty-first century. DBS offers some distinct technical possibilities. Most striking is the possibility of signal distribution over wide geographic areas, leading to the possibility of transnational broadcasting over large regions encompassing several nations (Comor, 1998). This means that programs would be made available that originated outside the legal jurisdiction of the audience members, and over which public authorities would not have the same forms of control that they would have with terrestrial broadcasting, cable distribution, or video sales and rentals that took place within a country. Although analogue DBS services have been available for some time, the use of digital technologies and smaller reception dishes have allowed for more channel capacity and lower costs for reception equipment. However, a number of factors have limited the development of undifferentiated transnational or global broadcasting services that are outside the jurisdiction of national laws. These factors are related to the goals of broadcasters, the needs of advertisers, and the preferences of audiences.

Without the possibility of collecting subscription revenues directly from nationally based subscribers, DBS broadcasters are limited to collecting revenues from advertisers. As noted, with digital compression, the number of signals that could be carried is very large. Without an ability to enforce differentiation between different subscribers, the possibility of marketing different packages and types of services (enhanced services, pay-per-view services) is very limited. Advertisers, even those operating in several countries, may also be interested in specific national markets or audience segments, and may have a limited desire to purchasing advertising on programs to be distributed to different countries. As well, audiences have demonstrated interests in programming with what Straubhaar (1991) calls cultural and linguistic proximity. The industry's need for on-the-ground means of, and legal support for, limiting unauthorized reception of DBS signals, collecting subscription fees, and differentiating among different packages
of services, all ways of increasing revenues and profitability, means that despite the vast geographic reach of DBS signals, the actual service packages that will be most popular and relevant for nationally based advertisers and audiences can be shaped by public policies and communications regulations. Hence, many of the same type of communication policy questions faced in broadcasting and cable television, such as program content (language, country of origin, control of specific types of content), geographic coverage of signals, and media ownership, are also faced in DBS policy.

Several questions arise from this discussion. If social and institutional shaping is as important as claimed, then differences in the deployment of DBS in Canada and Korea should be evident. Furthermore, differences in DBS should be traceable to national institutional differences in industry structure, policy, and audiences. The social shaping perspective also holds that the path of development should be significantly different from the realization of open-ended technological possibilities. Do signals cross national borders unimpeded? Is the national broadcasting system undermined? Are the economic models of existing broadcasters and program producers shattered? Is the idea of national communication policy or a national media system put into question? Do users of media systems have more freedom of choice and control?

**Korean satellite broadcasting industry and policy**

In Korea, there are five domestic terrestrial television broadcasting channels serving a population of 47 million persons (Gunaratne, 2000; Kim, 1996; Kim & Hong, 2001). All five networks are headquartered in Seoul. Seoul has a population of about 12 million, but is also surrounded by numerous satellite cities. Four of these networks are public—the Korean Broadcasting System 1 (KBS-1), KBS-2, the Munwha Broadcasting Corporation (MBC), the Educational Broadcasting System (EBS)—and they cover the whole country. Although there are regional broadcasting stations in these networks, the main programming is similar across the country, with one to two hours daily devoted to local news and programming from that region (estimated at less than 20% of programming according to one professional in Daegu). Although KBS-2 and MBC are publicly owned, their content is almost entirely commercially oriented and entertainment-oriented programs. Hence they compete for audiences most directly with the private channel, SBS, which is also comprised of entertainment-oriented programs. As a result, some commentators have voiced concerns that KBS-2 and MBC are not really serving the purposes associated with public broadcasters.

The one private national network based in Seoul, the Seoul Broadcasting System (SBS), is owned by a construction company, Taeyoung. SBS has affiliations with regional private broadcasting stations based in centres outside of Seoul (i.e., Pusan, Daegu, Kwangju, Incheon, Daejeon, and Cheonju). These regional stations were established only in the mid-1990s and are owned by various private commercial consortia based in these cities. SBS provides entertainment programming to these regional channels, while they provide local news from different regions for broadcast in Seoul. The advertising revenues of the five main channels
make up more than 80% of the television advertising revenues in Korea, meaning that the newer regional television stations have seen low revenues, low profitability, and numerous changes in ownership.

Cable-television services were launched in March of 1995 in large cities, and by 2000 cable service was available in all parts of the country. By 2002 there were about 6 million households subscribing to cable-television services. It is notable that prior to the introduction of a new cable-television policy, there were already numerous community antennae television (CATV) systems, which primarily re-transmitted terrestrial television. This re-transmission included all of the five major networks originating in Seoul. Following the structure set up by regulation, the cable industry defined after 1995 is made up of three types of companies, the System Operator (SO), the Program Provider (PP), and the Network Operator (NO). The System Operator provides services directly to subscribers, and ownership in this sector is restricted to small and medium-sized companies, as a way of restricting the possible development of monopoly power in this emerging activity. The Program Provider sector is made up of program content producers and distributors, who sell programming to System Operators. Many large industrial conglomerates, such as Samsung and Hyundai, owned Program Provider companies in the mid-1990s, but these were sold, since they were not as profitable as had been expected. There are two Network Operators: Korea Telecom (KT), which is the national telecommunications company (fully privatized in May 2002), and the Korea Electric Power Corp. (KEPCO), the national publicly owned electricity monopoly.

The government aimed to have large companies in the Network Operator segment, since these companies have experience in planning, building, and operating networks. They also have the size and access to capital necessary to undertake the large investments required to build cable-television distribution networks. The New Broadcasting Law of 2000 changed these rules, so that large companies may own System Operators, and System Operators can build their own networks. KT and KEPCO had also complained that they were losing money by building cable-television networks. As well, the Korean Broadcasting Commission (KBC), under the New Broadcasting Law of 2000, is encouraging CATV systems to merge with cable-television systems in order to create one standard model for cable systems throughout the country. Given the traditional dominance of the five major stations, audiences are still most familiar with these stations and their programming. They have less familiarity with cable television and DBS, which are still in their introductory stages.

The Korean satellite broadcasting service was launched in March 2002, after the establishment of a New Broadcasting Law at the end of 2000. Prior to the introduction of a Korean DBS service, about 10 million people were already receiving foreign satellite signals through their own satellite dishes or through CATV. Although CATV systems were officially limited to re-transmitting Korean terrestrial signals (since reception might be poor given the large number of apartment buildings in urban areas and hills in certain rural areas), many systems also
included foreign satellite signals, especially STAR-TV, NHK, CNN, and the BBC World Service. There were, in June 2002, around 200,000 subscribers to DBS services (Shin, 2002), but the industry has set a goal of 2 million households by 2004 (Yamaguchi, 2002).

Three main elements form the background to the launch of Korean satellite broadcasting (KBS, 1999; Park, Lee, & Lee, 2002). Firstly, the new services were designed to cope with the quickly changing digital media technologies available in what has been described as a revolutionary period. In the digital multi-channel and multimedia environment, direct satellite broadcasting was seen to be necessary to meet viewers’ diversified information and entertainment needs. Secondly, DBS technology was seen as a very suitable medium, both to advance and to confront the globalization of broadcasting, or at least the transnationalization of broadcasting. With more than 300 foreign satellite broadcasting channels available in the Asia-Pacific region, Korea needed to launch its own satellite broadcasting service. This would provide comparable Korean services to Korean audiences as well as extend Korea’s broadcasting service to those of Korean origin and other possible viewers in neighbouring Asian countries. Thirdly, broadcasting programs were seen as commodities from which profits could be maximized, not just by distribution through one channel, but by exploring multiple uses. DBS offered a way to enhance the economic value of programs by offering a new distribution channel as well by providing several hundred channels. The potential that DBS might stimulate increased viewing of Korean programs also meant that it was seen as an important economic tool to further the development of the national economy.

The next section of the paper examines the main DBS provider in South Korea at this time and the main purposes of Korean direct broadcast satellite policy. It also reviews industry and policy developments to date and comments on debates about desirable directions in the further development of DBS policy.

**The main Korean DBS player**

Only one company offers direct broadcast satellite services in Korea. The service is called SkyLife and is run by a consortium called Korea Digital Satellite Broadcasting (KDSB). Each of the companies in this group is from the public sector (with the exception of KT, which was privatized in 2002). The consortium is managed by the Korean Broadcasting System (KBS) and by Korea Telecom (KT). When the government decided upon which groups to license in December 2000, this consortium’s plan defeated that of another consortium from the private sector made up of LG, Dongyang, and Rupert Murdock’s NewsCorp. The government selected the public-sector consortium because of the stability of its funding sources, its access to plentiful program content for broadcasting, and its production capabilities. Some media analysts argued that political considerations might have been another important factor in this decision.

While KBS is officially a public broadcasting station, it is actually managed and controlled by the government. For example, the president of Korea appoints the station CEO. KBS is the largest broadcasting network among the two public
and one private television broadcasting networks in Korea. KBS is in charge of the software section (program content production and channel packaging) in the DBS venture. Korea Telecom is the largest telephone and telecommunication corporation in Korea and, as mentioned, was privatized in May 2002. KT owns and manages the satellite technology that is used for DBS service delivery, taking charge of the hardware section in DBS operations. In addition to KBS and KT, the television stations MBC (which is public) and SBS (which is private) also participate in the consortium. These stations provide their program feeds to the satellite distribution system.

In addition to the terrestrial channels it carries, SkyLife offers a total of 144 channels. These include 10 pay-per-view channels, 60 audio channels, and 74 video channels including news, sports, movies, education, documentaries, and foreign programming (including a Japanese service, NHK World Premium) (Yamaguchi, 2002).

The net effect of this policy is that several dominant terrestrial public broadcasting companies have expanded their control over broadcasting services into satellite delivery. Rather than using the new technology—with the tremendous capacity offered by digital compression of television signals—to allow viewers to gain access to different channels and voices, the monopoly power and dominant position of these companies in the broadcasting sector has been increased as a result of this move. It is particularly worrisome that there are no significant differences between the programming available on DBS and that available through terrestrial broadcasting services. Furthermore, there is no competition in Korean DBS services, since there is only one provider. The main reason the government gives to justify this monopolized structure is that the Korean broadcasting market is too small. At present, it is argued, the main competition to terrestrial broadcasting are cable-television networks and services, but these have not matured since being launched in 1995.

The purposes and expected effects of Korean DBS policy

When introducing the Korean direct broadcast satellite policy, the government stated that the policy was designed to achieve the key objectives that were part of the new broadcasting law introduced in 2000. Prior to the introduction of the new broadcasting law, broadcasting policies for terrestrial and cable television were set by the Ministry of Culture and the Ministry of Information and Communication. After the introduction of the new broadcasting law, the regulatory authority for broadcasting, now including DBS, was moved to the Korean Broadcasting Commission (KBC). Prior to the new broadcasting law, the KBC was mandated to deal with program content issues. Its responsibilities were expanded in 2000 to include licensing of service providers as well as identifying specific conditions for licences and licence renewals. These conditions include the channel packages that can be carried on cable and satellite, must-carry or mandatory programming rules, limitations on foreign programming, and content issues (violence, sexual content).

According to the government of South Korea, the four main purposes of Korean DBS policy are as follows:
Government and media experts agreed that these four objectives were the top priorities in guiding the design of specific elements of satellite policy. These objectives, and the means by which DBS policies will contribute to their fulfillment, are outlined below (Dacom Satellite Multimedia, 1998; Korean Ministry of Information and Communication, 1997, 1999).

The first stated purpose of Korean DBS policy is to improve the cultural welfare of viewers. By offering more channels and new information, cultural and entertainment programs, DBS will contribute to expanding the Korean people’s program choices and access to quality programming. Ultimately, it is claimed, DBS will improve the viewer’s cultural welfare. Also, by offering new public programs (e.g., silver channel, disabled people’s channel, a reunification channel), DBS will contribute to building new types of public broadcasting services.

The second purpose of Korean DBS policy is to have DBS serve as a supplemental component of or one network making up the broader Korean knowledge society and information superhighway. At present, this, the Korean information highway, is mainly made up by the digital wired networks of the telephone network, high-capacity digital subscriber lines, the cable-television network, and wireless services. DBS will further diversify national digital information networks by offering another distribution channel for programming and information.

The third purpose of the Korean DBS policy is to strengthen the content production industry in Korea. The program or content production industry in Korea is seen as having a poor performance record. It is argued that DBS, as a new program service outlet, will make demands for more content, and hence stimulate more program production and higher quality production. In this way, DBS will contribute to improving the environment for Korean content industries. It will also make new program funds available and improve broadcast program circulation structures. This, it is claimed, will broaden the number of Korean independent program providers and serve to build their experience and expertise.

The fourth objective of Korean DBS policy is to enhance the homogeneity of the One Korea community. One of the advantages of the DBS is its wide geographic coverage. This nationwide coverage, by providing common national programming content, may serve to strengthen national identity. Further, it will serve as an integrated medium for Korean people in the reunification area. Also, it will potentially serve to improve the extension or globalization of Korean culture. Currently, more than 300 foreign satellite broadcasting channels are provided in Korea. By launching their own satellite broadcasting, Koreans can both protect their national broadcasting sovereignty and project Korean cultural expression and knowledge about Korea to the rest of the Asian region.

One of the reports completed during the decision-making process regarding DBS modelled the expected macro-economic effects of the introduction of DBS
into both the Korean broadcasting industry and the Korean content creation industry (Auh, Choi, & Park, 1998; Park, 2000b). The research, which conducted a numerical analysis on a panoramic scale of the expected economic effects of the domestic satellite broadcasting on the related industries, concluded that (1) the broadcasting and content industries exhibited high import inducement effects; (2) a reduction of value-added to the economy by the broadcasting and contents industries could be expected; and (3) an increase of job and employment inducement in broadcasting and content industries could be expected.

**Elements of an improved satellite broadcasting policy**

A number of analysts argue that the objectives stated in the Korean DBS policy are not fully served by the specific means chosen in the DBS policy framework as it is currently organized and being implemented. They state that several choices and/or changes in Korean DBS policy would lead to the more effective achievement of public-interest objectives in this sector and would shape DBS accordingly (Park, 1999, 2000a).

**Broadcasting policy objectives: Differentiating among media technologies**

While each of the technical networks that allow broadcasting signals to be distributed to Korean viewers is part of the Korean national broadcasting system and should contribute to achieving national broadcasting policy objectives, we argue that each of the networks need not contribute to national broadcasting objectives in the same way. Given the geographic reach of different services, their unique contribution to serving audiences of various scopes should be recognized. Public broadcasting services should continuously pursue the provision of terrestrial broadcasting. Serving the public interest could be the primary goal for the terrestrial broadcasting services. For cable-television networks, regional and multiple convergence services should be emphasized. These networks can provide programs of interest to audiences of a regional scope and are also able to serve as a platform to provide interactive services or additional services such as audio or pay-per-view. Given its wide coverage, the primary service goals of satellite broadcasting could be national unity and multiple interactive services.

In addition to recognizing the technical capabilities and geographic scope of different technical networks, and how these possibilities and constraints can be recognized by public policy, it is also important to consider how market structures and regulatory approaches may vary in different broadcasting industry segments. For instance, for the cable-television and satellite broadcasting sectors, the government could pursue a market-driven and deregulatory media policy. On the contrary, the government could continue to protect the public broadcasting services of terrestrial broadcasting.

For instance, there is already differentiation among the different technologies of distribution with regard to content policies. Although control of sexually oriented content is very strong for terrestrial broadcasting, these controls are less stringent for cable television. With DBS, although signal-scrambling technologies are available, there are regulatory concerns about program content. Several pro-
grammers offering strong sexually oriented content were reprimanded by KBC in early 2002.

The role of foreign capital investment in the Korean satellite broadcasting industry
Currently, only 33% of foreign capital investment is allowed in the Korean satellite broadcasting channels. The reasons for this limit on foreign investment are mainly to protect Korean program content industries against the gigantic foreign broadcasters. However, some argue that the government should consider increasing this limit to 50%. Korea would benefit from a more flexible and open policy at the introductory stage of DBS. The benefits of a raised level of participation by foreign partners would be the ability to obtain advanced foreign broadcasters’ know-how and plentiful capital. For instance, Taiwan allows up to 50% foreign investment and Japan has no limit on foreign capital investment.

Building a cooperative system among terrestrial broadcasting, cable TV, and satellite broadcasting
The re-transmission policy for satellite broadcasting limits it to carrying the two public broadcasting services, EBS and KBS-1. It does not allow carriage of KBS-2, MBC, and SBS. But satellite broadcasting, in this introductory stage, does not have enough high-quality programs and needs to share programs with terrestrial broadcasting. Policy choice affecting programming quality and availability will shape the patterns of adoption and use of DBS technology and its overall role in the Korean broadcasting system.

Table 1: Proposals for an improved media policy

<table>
<thead>
<tr>
<th>Terrestrial Broadcasting</th>
<th>Cable TV</th>
<th>DBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pursuing universal public service</td>
<td>Pursuing regional and convergence service</td>
<td>Pursuing new multifunction and nationwide service</td>
</tr>
<tr>
<td>Public service model</td>
<td>Business model</td>
<td>Business model</td>
</tr>
<tr>
<td>Digitization</td>
<td>Digitization</td>
<td>Digital service</td>
</tr>
</tbody>
</table>


Many media analysts in Korea would support the movement of programming among different technical platforms, while encouraging the growth of open competition among different media technologies. One direction for media policies would be to allow shared program production and exchange arrangements, or a cooperative program exchange model among enterprises in terrestrial broadcasting, cable television, and DBS (see Table 1). This would also have the benefit of supporting the production of more Korean programming, rather than importing programming, consistent with DBS policy objectives. Policies allowing more open access by different types of broadcasting enterprises to the same pool of programming, or allowing their cooperation in creating programming, if appropri-
ately designed, could also support the creation of a pro-competitive media policy among the terrestrial broadcasting, cable television, and satellite broadcasting industries. The different media enterprises could select their unique strategy and positioning by developing different types of programming, channels, and different channel packages. For instance, terrestrial broadcasting might continue to emphasize the public television role. Although this programming could also be carried by cable television and DBS, these services might also choose to pursue programming models such as pay-per-view, specialty services, and different interactive services. Rather than assuming one type of service should predominate, efforts to encourage competition at this level would allow audiences to choose programming packages.

Canadian satellite broadcasting industry and policy
The Canadian television broadcasting system includes both publicly owned and privately owned stations and networks. The Canadian Broadcasting Corporation (English) and the Société Radiodiffusion de Canada (French) offer television and radio services in both official languages across Canada. The public networks are supported through public funding as well as through advertising revenues. Additionally, there are two private networks, Canwest Global and CTV, as well as a number of large independent stations. These private networks also receive a variety of forms of public support, whether for program production through tax deductions or direct subsidies, through required carriage of domestic signals on cable systems, through limiting the granting of licences to non-Canadian specialty channels, and through limiting terrestrial broadcast licence holders to Canadian firms (see Raboy, 1990).

There were 11.8 million Canadian households with television in 2002, and 11.2 million were passed by cable (meaning cable service was available). As Table 2 shows, most Canadian households receive their television signals through cable-television services (7.86 million in 2002) or through direct broadcast satellite (1.86 million in 2002), according to the Canadian Cable Telecommunications Association (CCTA, Annual report 2002-2003).

<table>
<thead>
<tr>
<th>Type of Service Provider</th>
<th>2000</th>
<th>%</th>
<th>2001</th>
<th>%</th>
<th>2002</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable</td>
<td>8,285,471</td>
<td>86.7</td>
<td>8,172,526</td>
<td>84.3</td>
<td>7,860,231</td>
<td>80.1</td>
</tr>
<tr>
<td>DTH</td>
<td>1,167,316</td>
<td>12.2</td>
<td>1,407,186</td>
<td>14.5</td>
<td>1,860,556</td>
<td>19.0</td>
</tr>
<tr>
<td>Other</td>
<td>109,174</td>
<td>1.1</td>
<td>116,666</td>
<td>1.2</td>
<td>89,144</td>
<td>0.9</td>
</tr>
<tr>
<td>Total</td>
<td>9,561,961</td>
<td></td>
<td>9,696,378</td>
<td></td>
<td>9,809,931</td>
<td></td>
</tr>
</tbody>
</table>


Canadian satellite broadcasting services are referred to as direct-to-home services, or DTH (Direct-to-Home Satellite Policy Review Panel, 1995). The increase in DTH subscribers over the past years is notable (see Table 2), and is a
matter of concern for terrestrial broadcasters and some cable-television broadcasters. According to a survey in summer 2003, while DTH subscribers paid more per month for service (averaging $55) than analogue cable subscribers (averaging $40), they received around 100 channels, almost twice as many as analogue cable subscribers. Digital cable subscribers paid an average of $60 per month for around 90 channels. DTH subscribers were more likely to say they were “very satisfied” with their service (53%) than were digital cable subscribers (46%) or analogue cable subscribers (37%) (Blackwell, 2003).

DTH services had a difficult start in Canada, and the actual services were introduced—the government had difficulty both in obtaining satellite capacity and in designing a policy—well after the technology made a Canadian service feasible. Star Choice was given authorization to operate by the CRTC in August 1996 and began offering services in spring 1997, while Bell ExpressVu obtained approval in December 1995 but did not offer services until September 1997. The costs for receivers were quite high at the beginning, with Star Choice receiver dishes priced at around $900 (with a $200 installation fee) and Bell ExpressVu dishes costing between $600 and $1,000 (Industry Canada, 2004). Prices dropped in the late 1990s, both for consumer equipment and services.

The services have been picked up relatively rapidly in the past five years, with the Canadian Association of Broadcasters’ estimate even going as high as 1.86 million subscribers by 2002. The rapid increases in subscription rates for DTH services mean that homes that did not have cable-television service or had only local terrestrial broadcasting services now have access to full packages of television programming comparable to that available in urban areas. Hence, DTH has contributed to meeting one of the long-term goals of Canadian broadcasting that has long been frustrated, that of making available relatively comparable packages of services to households throughout Canada. Given the vast geography of the country and the concentration of the population along the southern border with the United States, terrestrial broadcasting services could not cover the dispersed populations outside southern regions, and cable-television services did not reach many rural homes. On the other hand, the very success of DTH services has upset the arrangements among program producers, distribution companies, advertisers, and audiences that have typified the Canadian broadcasting system in the past two decades. To provide a sense of the disruption caused by the success of DTH services, some background on the Canadian broadcasting system is provided, after a brief outline of the present DTH industry.

The main Canadian DTH players
The two Canadian direct-to-home satellite broadcasting service providers are Bell ExpressVu and Star Choice. Bell ExpressVu is part of the Bell Canada Enterprises (BCE) group of companies. BCE includes the largest telephone company in Canada, Bell Canada, which is the main telephone company serving Ontario and Québec. These is no required structural separation between local and long-distance telephone service provision in Canada, so Bell Canada is also the largest long-distance provider. Bell Canada Enterprises, a holding company, also had a
stake in the telecommunications equipment provider Northern Telecom (Nortel) that was divested in the late 1990s. In the mass media field, BCE has a joint venture with *The Globe and Mail*, the Toronto-based English-language national newspaper owned by Thompson Publishing. Bell Globemedia’s activities include *The Globe and Mail*, CTV (Canada’s oldest and one of its largest private television networks), Globe Interactive (an information services provider), and Sympatico, the country’s largest telephone line-based Internet access provider. The dominant DTH provider, Bell ExpressVu, then, is part of one of the four large integrated media companies in Canada, and connected with the dominant telephone provider. The other direct-to-home satellite provider is Star Choice. This is owned by Shaw Communications, which is also an established cable-television company in Canada.

Each of these companies offer programming packages that include 40 to 50 channels in the “basic” package. This basic tier, as required by government regulation, is composed of Canadian services. It may include a number of channels from the same network from different time zones in Canada, as well as a selection of independent stations. Canada has five and a half time zones (with Newfoundland and Labrador in a time zone one-half hour ahead of the Maritime time zone). For instance, the DTH service Bell ExpressVu offers carries distinct CTV network signals from Montréal, Ottawa, Toronto, Winnipeg, Calgary, and Edmonton, as well as CTV-affiliated stations from St. John’s, Newfoundland, and Vancouver, British Columbia. Similar groups of multiple channels are offered for CBC (the English-language public broadcaster), SRC (the French-language public network), and Global Television. As Bell ExpressVu promotional material has noted, this allows viewers to engage in “time shifting,” to “Enjoy Local Canadian signals from all time zones.” Viewers are encouraged to “Consider It Time Travel from Bell ExpressVu.”

Additional service bundles, usually grouped in seven- to nine-channel bundles, include at least one or two Canadian services along with foreign channels, under the “one plus four” rule laid out by the regulator. Where possible, as with cable-television services, if a Canadian service is available, such as news, sports, lifestyles, or movies, this will be carried rather than a foreign service. For instance, one of the most popular cable-television channels in the United States, HBO, is not available on Canadian DTH services (although programming produced by HBO is licensed by conventional television networks and specialty services in Canada). To explain the complexity of the issues associated with direct-to-home broadcasting, the next section of the paper provides some background on the development of broadcasting and DTH policy in Canada.

**Main purposes of Canadian DTH policy**

Rather than design a new policy framework for DTH, Canadian DTH policy is designed to be as similar as possible to other broadcast distribution undertakings. This means that “cable, satellite and other distribution services” are treated, as far as is technically and legally possible, as fulfilling similar functions of program distribution in the national broadcasting system, and have similar types of obliga-
tions and responsibilities. Hence, in order to understand the types of issues and tensions that have arisen in Canadian DTH policy formation and development, it is useful to examine some of the unique arrangements that support and govern program production, broadcast distribution undertakings, advertising revenues for Canadian media, and audiences’ access to programming.

For English-language broadcasters, one fundamental reality serves as the starting premise of Canadian communications policy. Geographically, Canada sits alongside the largest English-language producer of cultural products and services in the world, whether for print, sound recordings, radio, film, television, or software. The size of the television audience in the United States, approximately ten times that of Canada, and its proximity to the border, means that there have been and will be numerous radio and television programs available from the United States. Given the size and revenues of U.S. television networks, the budget for several prime-time comedy or drama programs can be comparable to the entire annual programming budget of a Canadian broadcaster. The storylines and production values of these programs also attract large audiences in Canada. Hence, the challenge for English-language Canadian broadcasting policy is to create some Canadian alternatives within a television world dominated by U.S. programming. A large number of mechanisms have been tried, including Canadian content requirements for broadcasters, co-production agreements with numerous countries, and direct public support for the production of films, television and radio programs, and sound recordings. A consistent and increasingly important theme has been the attempt to strengthen the link between Canadian cable subscription fees, advertising expenditures to reach Canadian audiences, and revenues flowing to private Canadian broadcasters and program producers (Canadian Heritage, 1997). The private-sector program production and broadcasting sector is, therefore, one of the most important vehicles for achieving public-policy objectives in the Canadian broadcasting system.

Program production support is only a step in the overall policy goal. The promotion of Canadian audiences’ access to Canadian programming content is the central purpose of Canadian broadcasting policy (Ellis, 1992). In addition to the support through government funding of the English and French public-broadcasting networks across Canada, there are two main vehicles to ensure access to Canadian content in the privately owned broadcasting system: program placement and support for program production. Program placement is the requirement that there is a place on cable, satellite, or fixed wireless distribution systems for Canadian programming services. This is ensured “by requiring broadcasting distribution undertakings to give priority to Canadian programming services” (CRTC, 2002). This means that the basic tier, or first package of cable or satellite programming that a subscriber would be required to purchase, is composed of predominantly Canadian services, whether on cable, direct-to-home, or multipoint microwave distribution systems. While Canadian television networks may and do carry foreign programming, they also face additional Canadian content requirements in their overall program composition.
All broadcasting distribution undertakings are also required to “reinvest” a portion of their overall revenues in Canadian program production. These expenditures, along with tax deductions or tax subsidies for program production expenditures, as well as government programs providing funding for film and television production, are intended to support the production of high-quality Canadian programming in film, television, and radio and sound recording that will be of interest to Canadian audiences. These two measures—program placement and reinvestment—are also required of DTH broadcasters in Canada, and are consistent with requirements for conventional or terrestrial Canadian radio and television broadcasters.

These policies, and others, have been refined based upon the experience of cable-television regulation in Canada. For many analysts and policymakers concerned about promoting access of Canadian audiences to Canadian programming content, the cable-television policy that has emerged over the past two decades provides a unique model of success for directing the development of a Canadian broadcasting space. Canada has had a high level of cable-television subscriptions, with around 80% of households subscribing to cable-television services. Most television programming has been delivered through a wired network rather than through terrestrial broadcasting. Canadian legislative, policy, and regulatory measures have significant jurisdiction or control over the wired cable network.

The development of a Canadian direct broadcast satellite policy went through many starts and stops in the 1990s. The initial concern orienting this policy debate was that the footprint of coverage for U.S.-based direct satellite broadcasting services covered all of southern Canada, where around 90% of the Canadian population resides. The introduction of foreign broadcasting services would break apart the connections between programmers, broadcasters, advertisers, and audiences that had been built through Canadian content requirements, reinvestment, simultaneous program substitution, and program placement. These policies, the flow of revenues they ensured Canadian program producers, and the access to Canadian programming they provided, were seen as essential to the Canadian broadcasting system. The U.S. satellite services were portrayed by some as being “death stars” for the Canadian broadcasting system (“Who’s Afraid…,” 1996). These signals were not scrambled, and so could be picked up relatively easily by viewers. In a more nuanced assessment, but also a somewhat prescient claim, a Statistics Canada publication in 1996 stated that “The multi-channel universe promised by direct-to-home satellite broadcasting not only threatens even more the advertising revenue of television stations, but exerts further pressure on cable companies as well” (Gorman, 1996, p. i). Since several million Canadians travel by automobile to the United States for vacations each year, it was relatively easy for the reception technology (satellite dishes) to be brought into Canada, even with public prohibitions. For others the concern over foreign satellite signals was an overreaction. The worries assumed that U.S. broadcasting was forbidden fruit, eminently preferable to Canadian audiences to the Canadian mix that was available on cable.
Debates in direct broadcast satellite broadcasting policy

Several policy reviews and initiatives in the past three years have provided opportunities for various industry and public actors to raise concerns about the overall broadcasting system in Canada, as well as the role of direct-to-home broadcasting. These include a CRTC Public Notice (CRTC, 2001) calling for comments regarding carriage of local television stations by DTH undertakings in smaller markets, a review by the House of Commons Standing Committee on Canadian Heritage of the Canadian broadcasting system, efforts to restrict a “grey market” in the sale of reception dishes and subscriptions for U.S. services, as well as efforts to prevent the sale of illegal decoding devices for Canadian services.

Vertical integration of program production and broadcast distribution

A question that will need to be addressed is that of vertical integration of program production and distribution. There are presently only a handful of major media companies in Canada, each with activities in different media sectors. Canwest Global owns a television network as well as the Southam newspaper chain. Vidéotron is part of Quebecor, a dominant publisher in Québec. Rogers owns cable-television networks as well as publishing and telecommunications services. BCE, as noted above, holds several mass media companies in addition to being the largest telephone company.

One example illustrates these tensions. Bell Globemedia owns (through a subsidiary, Netstar) a French-language sports network (RDS) and an English-language sports specialty service (TSN). In the summer of 2002, Bell Globemedia was involved in a lawsuit and counter suit with the dominant cable-television provider in Québec, Vidéotron (Swift, 2002). Vidéotron claimed in early 2002 that it was charged $1.57 per subscriber for the sports channels, while Netstar, Bell Globemedia’s subsidiary, was charging less per subscriber to Bell ExpressVu for the same sports channels. Beginning in early 2002 Vidéotron unilaterally reduced the amount it paid per subscriber for the channels and has filed a lawsuit against Netstar to return $13.4 million (Canadian). For its part, Bell Globemedia claims that in addition to unilaterally reducing the fees per subscriber for the sports services, Vidéotron has been undercounting the number of subscribers to which it distributes these channels. Multi-unit dwellings with many subscribers (such as apartment buildings), Bell claims, have only been counted as one subscriber, significantly reducing the revenue flowing through to Netstar. Industry observers note that DTH services have become a significant competitor for multi-channel subscribers in Québec, and that the two companies’ approaches to their commercial dispute over service offerings also reflect a broader and deepening competition for viewers among competing distributors.

Should structural separation requirements be introduced to make specialty services available to different distribution networks at comparable rates? The conditions of access to programming will also shape the competitive prospects of services based on different media technologies, and programming that are not part of programming-integrated units.
Foreign capital investment and foreign services
Foreign capital participation is limited in both providing services and in the extent of ownership and co-ownership of specialty channels. As noted above, the efforts of Canadian policy have been to make a Canadian DTH service available in which Canadian channels have priority placement. A significant market has arisen facilitating the purchase of equipment to receive U.S. originating satellite signals. As well, some companies have made available post office box addresses in the United States that allow Canadians to subscribe to U.S.-based signals. The Canadian government has opposed these arrangements on policy grounds, while the Canadian broadcasting industry has opposed subscriptions to U.S. DBS services based upon Canadian broadcasters’ rights under commercial contracts. Since much of the programming that even the Canadian services broadcast is purchased or licensed for re-broadcast from United States producers, and since Canadian companies have obtained transmission rights in Canada, they argue that any payment to DBS services outside the country is infringing on their franchise rights in Canada. In this case, the payments for foreign programming licensed for re-broadcast on Canadian broadcast systems become a rationale for limiting direct access to foreign broadcasting systems.

Limiting illegal decoders and theft of Canadian and U.S.-based services
The policy approach to DTH is similar to that taken for other broadcasting distribution undertakings in that the government and the industry share the objective of preserving a Canadian dominance in distribution as a way to support Canadian program production, access of Canadian audiences to Canadian programming, and profitability. DTH services are a form of subscription television, and require an account and monthly payments even to gain access to the advertising-supported television stations carried on the basic service package or service tier. There are also specialty channels in more enhanced packages, as well as pay-per-view services. Access is controlled through decoding devices in the subscriber’s residence. A large black market has emerged in decoding devices or in copies or equivalents of the cards that instruct these decoding devices to block or decode specific channels.

The Canadian Cable Telecommunications Association commissioned a study in 2002 by the Strategic Counsel, which examined two regions in southwestern Ontario. Although these areas were served by cable, the report estimated that between 4.5% and 5.7% of these households received satellite signals illegally (an estimate of 602,762 of 10,574,772 cable households in Canada). Extrapolated to the whole Canadian market, which includes 12.5 million households and many areas not served by cable television, the report proposed a “conservative” estimate of 715,269 households (12,548,588 x 5.7%) with unauthorized access to satellite broadcast services (The Strategic Counsel, 2002). Similarly, a broadcasting industry coalition, the Coalition Against Satellite Signal Theft (CASST), estimates that up to 750,000 Canadians receive DBS signals either from U.S. services by setting up a U.S. post office box address for billing, or illegally from Canadian services or U.S.-based services by buying illegal decoding cards. Bell ExpressVu,
as well as two U.S.-based DBS providers, Direct TV and Dish Network, use access cards in their signal decoding devices, and these are relatively easy to pirate through stolen cards, reprogrammed cards, or card simulators (CASST, June 2003). Since U.S.-based DBS services such as DirectTV have only paid licence fees for program distribution to U.S. audiences and also lose revenues from the use of illegal decoding devices, they will disconnect customers who they find to be based in Canada. The two practices are claimed to cause losses of 400 million Canadian dollars per year for Canadian program producers and broadcast distributors (CASST, 2003; Shecter, 2003). Efforts to limit these practices have focused on the suppliers of equipment and services (van Pratt, 2002), but there are also efforts by satellite providers to cooperate with Crimestoppers to set up a 1-800 toll-free telephone number to report persons suspected of receiving illegal satellite services (Shecter, 2003).

In April 2002, the Supreme Court of Canada, in an appeal brought by Bell ExpressVu, confirmed that it was illegal to decode a satellite signal unless authorized by the lawful distributor of the signal. However, the industry has called for more active and direct government efforts to stop the distribution of unauthorized satellite dishes and decoder devices. In February 2004 the federal government introduced Bill C-2, Amendments to the Radiocommunication Act, which provided for significant increases in fines for “Corporations Decoding an encrypted signal or modifying equipment for this purpose” or for “Corporations that retransmit an encrypted subscription programming signal decoded without authorization” (CASST, 2004). A similar bill had been introduced in the previous session of Parliament (Industry Canada, 2004).

Critics have argued that in seeking to support the Canadian private broadcasting industry as a vehicle for pursuing broadcasting policy objectives, the government has allowed a tremendous concentration of media ownership in Canada, which has also had the effect of limiting access to diverse media voices.

Relations among terrestrial broadcasting, cable TV, and satellite broadcasting
Another issue is the effect that national broadcasting of numerous network signals will have on the audiences for local television stations distributed by terrestrial broadcasting or cable, and the advertising revenues for small local stations. Although offering of multiple signals from the same network across Canada may be convenient to viewers by allowing them to view programs at a preferred time, this, according to the Canadian Association of Broadcasters, has cut into the audiences for some local stations. These stations have paid program licensing fees for specific broadcast areas and markets, and they are able to charge advertisers based on the size and composition of the audience for a program. Any loss of local audiences will be reflected in losses of advertising revenues available to local stations, even if there are some new viewers watching in other parts of the country.

The Canadian Association of Broadcasters, the industry group representing private-sector radio and television broadcasters as well as specialty channels and cable distribution systems (although there are also a number of other active organizations, including the Canadian Cable Telecommunications Association), has
argued against several provisions of the rules guiding DTH. Most importantly has been the loss of audiences from local terrestrial television broadcasters to similar services on DTH. As noted above, while there are important independent television stations in Canada, most private stations are affiliates of the CTV Network, Canwest Global, or Quatre Saisons in Québec. There are also the English- and French-language services of the Canadian Broadcasting Corporation and Société Radiodiffusion de Canada, that have networks across Canada. The program arrangements on cable television, in which regionally based cable distribution systems integrated local stations with the distant signals of specialty services, was a strategy used to support local broadcasting stations. However, the movement to an expanding multi-channel universe over the past two decades has already eroded significantly the audiences for local network affiliates. It should be remembered that the inclusion of specific local network affiliates’ signals in a cable program package, however, was more of a policy choice than a technical requirement, as many distant signals could be and are distributed on cable. Discerning the appropriate balance between providing viewer convenience and setting up a structure that continues to direct local advertising revenues to television broadcasters will be a significant challenge for DTH policy.

Conclusion
Several themes and issues have been addressed in both of these cases. Some are common to both, including the dominance of existing telecommunications companies in the emerging DBS service sector, and efforts to promote independent audiovisual production companies to supply new media channels. Other policy and industry questions are more unique to each country’s situation, but these may provide useful examples and lessons to consider in other countries. There are informal indications that Korean policymakers are looking at various examples, including Canada, in attempts to develop a Korean DBS policy.

Both countries are grappling with the challenges and tensions of juxtaposing local broadcasting with direct satellite broadcasting services with a national scope. The specific mechanisms of local broadcasting re-transmission are shaping both the attractiveness of the DBS services and the future prosperity and even survival of the local broadcasters. In Korea, cable systems are allowed to carry all five national networks, and CATV subscribers have grown used to receiving foreign DBS signals (although these are not officially licensed from the originator). However, the re-transmission of terrestrial broadcast signals on Korean satellites is very limited, with only two of the five national broadcast systems. These two channels (KBS-1 and EBS) are the least popular of the five major channels, being less popular than KBS-2, MBC, and SBS. This makes DBS services less attractive to audience members. The president of SkyLife warns that DBS services will not survive if they are not allowed to transmit these popular national channels. At the same time KBC, the regulator, claims that this policy is to ensure a balanced development among the three broadcast distribution systems. However, since the established terrestrial broadcasters have in-house production companies and more than 80% of advertising revenues, this policy reinforces their
monopoly position and limits the growth of satellite distribution. It appears that SkyLife will need to be allowed either to re-transmit popular channels or be allowed to purchase popular programming from terrestrial broadcasters in order to build audiences, especially in light of the strength of terrestrial and cable broadcasting systems.

In Canada, the concerns run in the other direction. Terrestrial broadcasting signals are carried by the DTH services, and, as noted above, a whole group of similar network signals from different time zones are included in the basic DTH package. Cable-television systems are required and allowed to carry only terrestrial broadcasting signals from their region, and to offer them in their basic service package. Conventional broadcasters have complained that while they have paid royalties to broadcast programming to specific regions, they have lost audience members who watch signals from other parts of the country via DTH services.

The program/channel packaging policy in Canada (four foreign plus one Canadian) is a very useful example for Korea. Korea does not yet have a detailed policy regarding domestic and foreign programming, although Korean DBS ser-

### Table 3: Comparing DBS policy in South Korea and Canada

<table>
<thead>
<tr>
<th></th>
<th>South Korea</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starting Period</td>
<td>March 2002</td>
<td>1995</td>
</tr>
<tr>
<td>No. of DBS Providers</td>
<td>Only one consortium (Korea Digital Satellite Broadcasting, KDDB)</td>
<td>Two DBS providers</td>
</tr>
<tr>
<td>Name and Main Shareholders</td>
<td>SkyLife</td>
<td>Bell ExpressVu: Part of Bell Canada Enterprises Group (owns the largest telco, Bell Canada)</td>
</tr>
<tr>
<td></td>
<td>Two public terrestrial broadcasters (KBS, MBC) and dominant Korea Telco (KT)</td>
<td>StarChoice: Owned by Shaw Communication (cable-TV company)</td>
</tr>
<tr>
<td>Main Purpose</td>
<td>Improving viewers’ cultural welfare</td>
<td>Similar objectives to Broadcasting Act</td>
</tr>
<tr>
<td></td>
<td>Accelerating development of the knowledge society</td>
<td>Improving audiences’ access to Canadian programming</td>
</tr>
<tr>
<td></td>
<td>Strengthening the content industry’s competitive position</td>
<td>Promoting Canadian program production</td>
</tr>
<tr>
<td></td>
<td>Raising the homogeneity of the One Korea community</td>
<td></td>
</tr>
<tr>
<td>Current Subscribers</td>
<td>200,000 (June 2002)</td>
<td>1.86 million (2002)</td>
</tr>
<tr>
<td>No. of Channels</td>
<td>144 channels including 74 video channels, 60 audio channels and 10 pay-per-view</td>
<td>50 basic channels, plus enhanced bundles and pay-per-view and audio channels</td>
</tr>
<tr>
<td>Percent of Foreign Capital</td>
<td>Allowed maximum 30%</td>
<td>None allowed in distribution, some in programming channels</td>
</tr>
<tr>
<td>Regulating Body</td>
<td>Korea Broadcasting Commission</td>
<td>CRTC</td>
</tr>
</tbody>
</table>

Source: Broadcasting Act, 1991, c. 11.
vices may not exceed 50% of foreign programs. This more detailed bundling or packaging policy may offer a model for consideration in Korea.

Rather than seeing cable, terrestrial, and DBS only as competitors with each other, one significant challenge for both countries will be to create policy models and frameworks in which these are all seen as important parts of the national broadcasting system, working in a complementary fashion to make their unique contributions to serving audiences and national policy objectives. However, at present many of the inter-industry struggles seem to portray any gains for one distribution technology as a clear loss for another industry segment.

In Canada there are two providers of DTH services, and several additional licences were actually issued to provide services. (These other service providers have either not offered services or have discontinued services.) In Korea, on the other hand, there is no competition, and the DBS services are provided by the only national company to be granted a licence by the KBC. The KBC argued that since the Korean market is very small, and since DBS is a competitive system with terrestrial and cable distribution, therefore only one DBS provider is sufficient. This policy may be adequate for the introduction of DBS. Ultimately, however, once DBS is established, competition may be a useful device to prevent the emergence of a monopoly in this sector. Korean analysts argue that it should be up to providers and consumers to determine what services should be offered to and subscribed to by the public.

The efforts to control foreign signals also differ between the two countries. In Korea, although there is only one DBS provider, there is no detailed policy to prohibit foreign signals, and many Korean viewers watch DBS channels originating from outside the country (such as STAR-TV from Hong Kong, or NHK-1 and NHK-2 from Japan). In Canada, however, purchasing and using reception equipment to receive unauthorized signals originating outside of Canada is officially prohibited. The goals of the Canadian broadcasting policy are to provide access to both Canadian signals, giving them preference, and to foreign signals. However, subscribing to a DBS service from outside of Canada is not allowed. This has created a significant level of tension, as there is a significant “grey market” in satellite reception equipment and services, and efforts to control the reception of non-Canadian DBS signals have been important to both the DTH providers as well as to the cable-television service providers.

Does comparison of the experiences of each country assist in identifying the importance of industry and policy choices, and how they might shape the development and configuration of satellite broadcasting technology and services? A possible lesson that can be drawn from these examples is the importance of media policies, institutions, and industries in shaping the introduction and configuration of a new medium. This is not just a technical question. The institutional assumptions and goals in broadcasting policy shape the tasks to which the new medium of DBS is applied. Even in Canada, where time-shifting of programs has led to a significant shift in audiences, it is the policy choices over program carriage that will
be a major force in shaping the outcome of this struggle, rather than the technical characteristics of networks alone.

In many ways, national conditions, media policies, industry structure, and media uses differ significantly in these two countries. A relatively similar technical network, direct satellite broadcast distribution, has been structured in very different ways. Although direct broadcast satellite technologies have been seen primarily as a technical system that crosses and covers vast geographical spaces, their specific significance in these cases arises more from policy choices and institutional arrangements than from fulfilling technical possibilities. While change has occurred, rather than emerging as a threat to national media policies and broadcasting systems, DBS has been incorporated into national broadcasting systems and used to serve the policy goals that are already in place. Existing private-sector actors, including those already dominant in other media sectors, have incorporated the new distribution technology into their overall strategies and plans, rather than being swept away by the new technology. The state and the private sector have acted to introduce the new technology with a minimum of disruption, cooperating actively to limit audience attempts to gain unauthorized access to signals.

The comparison therefore illustrates the fluid and malleable nature of satellite technical systems, a specific case of a more general point which theories of social shaping of technologies emphasize (Lievrouw & Livingstone, 2002; Volti, 2001). Rather than emphasizing common features of direct broadcast satellite systems arising from the nature of the technology and the pressures they place on nationally based media, this suggests that a more productive line of research will be to compare the ways in which satellite broadcasting is being integrated into and shaped by national media institutions.

References


