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ECONOMIC GROWTH AND INNOVATION

Scrambled Signals:
Canadian Content Policies in a World of Technological Abundance

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In this issue...

In the unfolding digital world, the regulations traditionally used to foster Canadian content in the broadcasting and telecommunications sector will not be viable. There are solutions.

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The Study in Brief

Having undergone a transformation from an era of a few channels broadcast over the air to hundreds of channels available via cable or satellite, Canada's broadcasting and telecommunications sector is on the verge of another tectonic shift.

The emergence of media provided over the Internet poses considerable challenges for one of the defining features of Canadian media regulation: the promotion of Canadian content. This *Commentary* will argue that important instruments traditionally used to foster and develop that content will not be viable in the digital world.

The transition from a "push" network, where entertainment choices were limited to that available at a given time, to a "pull" network, where content is available on demand, will render many current tools obsolete. Ownership regulations and exhibition and expenditure quotas that mandate Canadian ownership of media and the percentage of Canadian content broadcast or purchased will be unenforceable online and should be abolished.

Other tools that promote Canadian content may still be useful in the future. Public broadcasting, including the CBC, could be bolstered to ensure an outlet for Canadian content. Public subsidy to Canadian content could ensure that there is Canadian content available for those who want it.

However, the means of supporting this subsidy will have to change. In the past, broadcasters directly and indirectly subsidized Canadian content production. Currently, cable and satellite companies are in a strong position to fund Canadian content given their potential market power over distribution networks. The rise of the Internet and wireless transmission will change that balance yet again.

The future of telecommunications and broadcasting regulation should be limited to expressly anti-competitive activities. Parties should have access to distribution networks on commercially reasonable, arm's-length terms that do not reflect the network owner's potential conflicts of interest resulting from a desire to limit competition.

As is so often the case, exiting from regulation is more difficult than entering it but Canadian policymakers have no choice but to embark on this transition. To that end, a review by an independent expert panel charged with proposing a transition roadmap is urgently needed.

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INDEPENDENT • REASONED • RELEVANT

Digital technology, especially the Internet, has revolutionized our economic activities, social interactions and personal lives. As Eli Noam, managing director of Columbia University's Institute for Tele-information, put it in a recent report to the Canadian Radio-television and Telecommunications Commission (CRTC), the digital revolution "is the equivalent of moving from horses, to trains, to personal automobiles, to personal jets all within a few years (Noam 2008)."

A recent British government study reports that digital sectors already account for nearly £1 of every £10 produced by its economy. If, as expected, the volume of digital content increases by 10- to 100-fold over the next three to five years, *Digital Britain* concludes that there will be a "big bang" in the communications industry (UK 2009).

Tracing the implications of this technological revolution is a daunting challenge, in large part because it is impossible to anticipate all the technological innovations that may occur, even in the near to medium-term future.[1] To render this task more tractable, we have chosen to focus on the English-language,[2] Canadian creative-content industries as a prism through which to view these technological changes and as a microcosm of some of their policy implications. Specifically, we examine the implications of this technological revolution for Canadian content policies in audio-visual broadcasting media that have been essentially in place since the late 1950s.

For about 50 years, broadcasting was largely characterized by a handful of radio and television channels, subsequently supplemented by a small number of cable TV offerings. Then, about a decade ago, specialty TV channels available by cable or satellite and made possible by digital technology began to proliferate. (We call this the movement from the five-channel to the 500-channel universe for ease of reference.)

More recently with the proliferation of the Internet, an entirely new platform for the communication and consumption of creative content has emerged. As *Digital Britain* puts it, this "allows us to send or receive 200 MP3 music files in five minutes, an entire Star Wars DVD in three minutes and the total digitized works of Charles Dickens in less than 10 minutes" (UK 2009, 8).

Noam emphasizes three related technological developments that are key agents of change in today's rapidly transforming media:

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1 However, for a review of many of these potential implications, see *Digital Britain* (2009).

2 The French-language market in Canada is distinct from the English-language market, based largely on the fact that the English-language programming available from US broadcasters does not normally compete for francophone viewers. Indeed, the *Broadcasting Act* (S.C. 1991, c. 11) acknowledges that "English and French language broadcasting, while sharing common aspects, operate under different conditions and may have different requirements."

- The broadbanding of networks, in which an increasingly powerful transmission infrastructure creates platforms for the individualized production, distribution and consumption of media content such as video (the most formidable such platform being the Internet);
- Wireless ubiquity, which creates a wide geographic reach for two-way communications through cellular networks of increasing power and enables the transmission of media content such as video; and
- Digital convergence, which removes many of the technical barriers that separated the various media activities, companies, industries and regulations.

Together, these forces transform the media landscape and raise questions about the future role of government.

Beginning in the 1950s, when the sector was characterized by a scarcity of transmission spectrum, few media channels, some degree of media market power and some government ability to regulate Canadian content, the media universe has evolved to a point where consumers have almost infinite choices of what to view, when to view it and on what medium to view it. On the supply side, media that once faced limited competition and operated on business models driven for the most part by advertising-generated revenue, now find themselves in competition with a vast array of content providers.

The "push"-driven model of Canadian-content promotion that has prevailed until now, predicated on relatively few channels and audiences with limited choice, cannot be sustained in the face of a "pull"-driven model of creative-content provision where consumers control what they view, when they view it and on what platform.

In this new universe, most of the standard array of regulatory tools to promote Canadian content is being rendered obsolete. We conclude that content policies can feasibly focus only on supporting Canadian creative-content production through direct subsidies. Such financial support should ensure that Canadian content is actually produced and that viewers have ready access to it by ensuring that major distributors do not unreasonably impede access to these conduits through abuse of market power or discriminatory access policies. In this respect, as Web communications and other distribution platforms increasingly converge, broadcasting policy and telecommunications policy may also increasingly converge to ensure continued access.

Beyond these policies, we envisage an enlarged role for the CBC as the producer and purveyor of Canadian content. We propose a transition strategy from current and increasingly impractical Canadian-content policies to a more practical regime in the new technological universe.

PART 1
Current Objectives and Instruments of Canadian Content Policy

Objectives

Most industrialized countries have adopted policies designed to promote and protect domestic cultural activities. Canada is no different, and the goal of fostering Canadian content is particularly prominent in broadcasting. The *Broadcasting Act*[3] contains, in Section 3, a set of policy objectives intended to guide the CRTC in performing its key regulatory duties. A number of these objectives relate to access to Canadian production of varied

3 S.C. 1991, c. 11.

and comprehensive high-quality Canadian programming.[4]

The origins of these objectives can be traced to the Massey Commission in 1951, which called for strict control over television stations and for the CBC to encourage Canadian content. This was followed by the Fowler Royal Commission on Broadcasting in 1957, which concluded that if Canadians wished to maintain a certain level of distinctly Canadian programming, it would be necessary to regulate matters such as the importation of programs and advertising content and subsidize the Canadian production of programs. Prior to the enactment of the 1968 *Broadcasting Act*, the House of Commons Standing Committee on Broadcasting, Film and Assistance to the Arts advocated that meeting minimum Canadian content requirements should be a condition of licence for broadcasters.

More recently, in the comprehensive public review and study that would set the stage for the eventual passage of the current *Broadcasting Act*, the federal Caplan-Sauvageau Task Force on Broadcasting Policy recommended the continuation of both Canadian program exhibition requirements and expenditure levels, as well as the creation of a new, national, non-commercial specialty service devoted to Canadian programming, with a particular emphasis on traditionally under-represented categories such as documentaries, the performing arts and children's programming.

As discussed below, the realization of these objectives within the traditional confines of the *Broadcasting Act* is being strained by technological convergence. This results in telecom providers increasingly providing broadcasting distribution services and, conversely, broadcasting distributors increasingly providing telecom services. However, it is clear that current telecom policy has objectives that tend to focus on the economic

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4 Specifically, the section provides:

(d) the Canadian broadcasting system should

...

(ii) encourage the development of Canadian expression by providing a wide range of programming that reflects Canadian attitudes, opinions, ideas, values and artistic creativity, by displaying Canadian talent in entertainment programming and by offering information and analysis concerning Canada and other countries from a Canadian point of view,

(iii) through its programming and the employment opportunities arising out of its operations, serve the needs and interests, and reflect the circumstances and aspirations, of Canadian men, women and children, including equal rights, the linguistic duality and multicultural and multiracial nature of Canadian society and the special place of aboriginal peoples within that society, and

...

(e) each element of the Canadian broadcasting system shall contribute in an appropriate manner to the creation and presentation of Canadian programming;

...

(f) each broadcasting undertaking shall make maximum use, and in no case less than predominant use, of Canadian creative and other resources in the creation and presentation of programming, unless the nature of the service provided by the undertaking, such as specialized content or format or the use of languages other than French and English, renders that use impracticable, in which case the undertaking shall make the greatest practicable use of those resources;

(g) the programming originated by broadcasting undertakings should be of high standard;

...

(i) the programming provided by the Canadian broadcasting system should

(i) be varied and comprehensive, providing a balance of information, enlightenment and entertainment for men, women and children of all ages, interests and tastes,

(ii) be drawn from local, regional, national and international sources,

(iii) include educational and community programs,

(iv) provide a reasonable opportunity for the public to be exposed to the expression of differing views on matters of public concern, and

(v) include a significant contribution from the Canadian independent production sector;

...

(s) private networks and programming undertakings should, to an extent consistent with the financial and other resources available to them,

(i) contribute significantly to the creation and presentation of Canadian programming, and

...

(t) distribution undertakings

(i) should give priority to the carriage of Canadian programming services and, in particular, to the carriage of local Canadian stations.

efficiency of the sector rather than support of Canadian culture. The *Telecommunications Act*[5] contains a number of objectives relating to enhanced efficiency and competitiveness.[6] The federal government reinforced this focus in 2006 by directing the CRTC to rely as much as possible on market forces and, where regulation is required, to do so in a manner that interferes with market forces as little as possible.[7]

Given that the policy objectives in the *Telecommunications Act* were crafted at a time when cultural content was not disseminated to a large extent by telecom networks, it is not surprising that the statute is silent on this issue. Whether the *Telecommunications Act* should, because of the realities of technological convergence, provide as an objective – and make available instruments for – the promotion of Canadian content will be discussed below.

Rationales

To evaluate policy designed to promote Canadian culture in broadcasting, we first need an understanding of why we want to protect culture and, therefore, what "culture" is. Culture is susceptible to an almost infinite number of definitions.[8] Conventionally, culture may be viewed as a process in which groups and individuals share and exchange ideas, values, perceptions and experiences whereby a society's collective attitudes, goals and values are formed and transmitted to succeeding generations. Every society has some distinctive cultural characteristics that it will want to preserve that distinguish it from other societies. This is not to say that all cultural characteristics are normatively equally defensible – some may be self-destructive or destructive of others – but in other respects cultural pluralism and diversity undoubtedly enhance the richness of the human condition.

However, this said, cultural pluralism and diversity may exist not only among members of different societies but also within a given society. For example, identifying common or core Canadian attitudes, opinions, ideas, beliefs and values has become increasingly challenging over time as the diversity of the cultural backgrounds of Canadians has dramatically broadened, in part because of large-scale immigration from an increasingly wide range of countries with cultural values different from those of Canada's three founding peoples: Aboriginal, French and English. This is not merely an academic point, but raises a formidable challenge in evaluating whether Canadian content policies, e.g., in the

5 S.C. 1993, c. 38.

6 Section 7 states as the objectives of Canadian telecommunications policy, in relevant part:

(**b**) to render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada;

(**c**) to enhance the efficiency and competitiveness, at the national and international levels, of Canadian telecommunications;

…

(**e**) to promote the use of Canadian transmission facilities for telecommunications within Canada and between Canada and points outside Canada;

(**f**) to foster increased reliance on market forces for the provision of telecommunications services and to ensure that regulation, where required, is efficient and effective;

(**g**) to stimulate research and development in Canada in the field of telecommunications and to encourage innovation in the provision of telecommunications services;

(**h**) to respond to the economic and social requirements of users of telecommunications services;

7 *Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives,* SOR/2006-355, which states in relevant part:

In exercising its powers and performing its duties under the *Telecommunications Act*, the Canadian Radio-television and Telecommunications Commission (the "Commission") shall implement the Canadian telecommunications policy objectives set out in section 7 of that Act, in accordance with the following:

(**a**) the Commission should

(i) rely on market forces to the maximum extent feasible as the means of achieving the telecommunications policy objectives, and

(ii) when relying on regulation, use measures that are efficient and proportionate to their purpose and that interfere with the operation of competitive market forces to the minimum extent necessary to meet the policy objectives;

8 See Kroeber and Kluckhohn (1963), noting almost 170 definitions.

Table 1: Promoting Culture: Summary of Economic Justifications for Government Involvement

Economic Justification	Definition	Applications
Positive demand-side externalities.	Consumers take into account only the personal value of a good or service; failure to take into account the value to other consumers results in a demand for the good or service that is less than socially optimal.	Participation in the production of a cultural good; observing a final good; preservation of historical buildings, communities; impact on future generations.
Positive supply-side externalities.	Producers do not take into account benefits in production that would allow for the production of more goods (or a better quality of good).	Artists exposed to other artists provide inspiration and facilitate higher quality goods (peer effects); economic development (e.g., tourism; location decisions).
Public good.	A good or service can be enjoyed by many consumers; the marginal cost of providing the good is zero; it is very expensive to exclude others from using the good. If this latter qualification is not met, the good can be considered a quasi-public good.	Statues in parks, street festivals, theatrical performances, museums, sporting events, television broadcasting, film showings.
Good is significantly worthy or requires exposure (merit goods).	A good or service provides some societal benefit that requires government support above and beyond the type of support that would be provided for other goods that do not provide the societal benefit; alternatively, to acquire a taste for a cultural good one must first be exposed to the good or service.	Finished cultural goods or services.
Equality of exposure.	Private provision of goods or services results in only certain economic groups enjoying the good.	Finished cultural goods or services.
Infant industry.	New types of cultural goods and/or new cultural organizations are highly susceptible to failure, suggesting that for the new cultural good (or organization) to survive, government support is needed.	New forms of cultural goods or services and/or new organizations that support a process involved in the provision of cultural goods or services.

Source: Payne (2003).

broadcasting sector, are indeed achieving their intended policy goals in a cost-effective manner. If we cannot identify the goals with any degree of precision, it becomes difficult, perhaps impossible, to evaluate whether the policy instruments chosen to advance those goals are the most appropriate.

One might, of course, argue that in a contemporary Canadian context celebrating and reinforcing our internal cultural diversity and inculcating a tolerance and respect for these differences, is in itself a goal of domestic cultural policies (Adams 2007). If one takes this view – "let a thousand flowers bloom" – one might argue that the role of government is to impose as few constraints on freedom of expression and association as possible and allow cultural values, beliefs and practices to evolve spontaneously in a bottom-up process rather than being directed or shaped by top-down government policies.

However, few governments in the industrialized world have taken this essentially libertarian view of culture. Various justifications for government involvement in the promotion or protection of culture have been identified in the literature (Baumol 2003).[9] These rationales, at least framed as economic justifications for government interventions in otherwise private market activities, are usefully summarized in Table 1 (adapted from Payne 2003).[10]

9 For a detailed overview of a number of strands of economic literature relating to cultural industries, see Throsby (1994). See also Blaug (2001) and Netzer (1978). More generally, for the starting point in modern cultural economics, see Baumol and Bowen (1966).

10 See also Schwanen (1997) and Hay (2000).

For purposes of this *Commentary*, we assume that at least some of these rationales for government intervention in the cultural domain have normative validity. We now turn to a review of the available policy instruments in the cultural domain, with a particular focus on broadcasting content.

Instruments

We now examine six policy tools that have been used to promote Canadian content: exhibition quotas, expenditure quotas, production subsidies, foreign ownership restrictions, public ownership and access rules.

(i) EXHIBITION QUOTAS

One policy instrument to ensure that the desired content is actually broadcast is an exhibition or scheduling quota. Such quotas can be imposed on all or some sub-set of broadcasters,[11] requiring them to devote a prescribed minimum percentage of viewing time to Canadian content. Broadcasters incur whatever costs are entailed in acquiring the prescribed content. This instrument requires criteria for identifying qualifying Canadian content either by reference to input criteria or output criteria (or a combination of the two) and perhaps by category of material (e.g., news, sports coverage, drama, etc.). Such a quota, standing alone, can be financed by the broadcasters, on the basis that, at least in the past, scarce broadcasting spectrum and limited competition created profits that governments could draw from, either explicitly through financial contributions or implicitly through the imposition of unprofitable obligations.

In Canada, as in many other jurisdictions, scheduling restrictions are a major policy instrument for promoting local content. Scheduling requirements obligate broadcasters to air a certain level of Canadian content.[12] The most familiar requirement is that broadcast licensees must devote at least 60 percent of the broadcast year to Canadian programming, including at least 50 percent of the evening broadcast period (60 percent for public licence holders).[13] Further, CRTC policy mandates that the largest multi-station ownership groups must broadcast eight hours per week of "priority programming" during the peak viewing period of 7 p.m. to 11 p.m., Monday through Sunday. Priority programming consists of Canadian drama programs; Canadian music, dance and variety programs; Canadian long-form documentary programs; Canadian regionally produced programs in all categories other than news and information and sports; and Canadian entertainment magazine programs.

The CRTC also makes available time credits of 150 percent or 125 percent (depending on the amount of Canadian key creative points a program receives) to the largest multi-station

11 The term "broadcaster" is used throughout this *Commentary* to refer generally to what the *Broadcasting Act* defines as "programming undertakings," including licensed over-the-air television, specialty, pay, pay-per-view and video-on-demand services.

12 The criteria used to define a Canadian program are set out in Public Notice CRTC 2000-42, "Certification for Canadian Programs – A revised approach," Appendices I and II, March 17, 2000. Generally, a production qualifies as Canadian if it meets the following requirements: (a) a Canadian producer controls and is the central decision-maker of a production from beginning to end; (b) the production earns at least six points based on the key creative functions being performed by Canadians, according to the following breakdown and so long as at least one of the two lead performers, plus either the director or screenwriter, are Canadian: director (2 points), screenwriter (2 points), lead performer/first voice (1 point), second lead performer/second voice (1 point), production designer (1 point), director of photography (1 point), music composer (1 point) and picture editor (1 point); and (c) at least 75 percent of the service costs are paid to Canadians (service costs are calculated as the total cost of a production minus: remuneration for producers and co-producers, remuneration for key creative personnel eligible for points, post-production/lab costs, accounting and legal fees, insurance brokerage and financing costs, indirect expenses, contingency costs, goods purchased (i.e., film supplies) and other costs not directly related to production) and at least 75 percent of post-production/lab costs must be paid for services provided in Canada by Canadians or Canadian companies. Note that specific rules also apply to such productions as series, sports events, music video clips and certain types of animation.

13 SOR/87-49, ss. 4(6) and (7). In fact, Canadian programming exhibition requirements apply to all "programming" undertakings, including radio, specialty and pay television licensees. The required percentages of Canadian content vary among these various classes of undertakings, and in some cases, such as for specialty licensees, the required percentage of Canadian content can vary widely among individual licensees.

For criticism of the quota system in broadcasting, see Acheson, Maule and Filleul (1989). For empirical work questioning the effectiveness of Canadian content regulations, see Anderson, Swimmer and Suen (1997).

ownership groups for broadcasting Canadian drama programs during peak times. For example, a one-hour program that earns a 150 percent time credit would count for 1.5 hours of Canadian programming required to be broadcast during the peak viewing period.[14]

Similar CRTC regulations also require radio stations to ensure that a certain percentage of the music they play counts as Canadian. At present, English-language commercial radio stations must ensure that at least 35 percent of the popular music they broadcast is Canadian.[15] This 35 percent requirement must be met both over the broadcast week as a whole and between 6 a.m. and 6 p.m. from Monday to Friday.[16]

(ii) EXPENDITURE QUOTAS

Quotas operating in isolation will not necessarily ensure that quality Canadian programming is broadcast, as broadcasters might simply fill their Canadian content quotas with the cheapest productions possible. Thus, the CRTC has historically required broadcasters to spend a certain amount of money – typically a percentage of the station's gross revenue in the previous year – on the acquisition or production of Canadian programming. Typically, such expenditures must be directed exclusively toward specified categories of programming, such as drama. The rules relating to expenditure requirements have differed in recent years between conventional English-language broadcasters on the one hand and the specialty and pay sector on the other hand.[17]

Prior to 2000, conventional television stations were subject to a Canadian content expenditure requirement. However, in a 1999 public notice the CRTC announced that Canadian programming expenditure requirements would be eliminated as of Sept. 1, 2000. This decision was based on concerns that the requirements were overly complex, were sometimes applied inequitably and may not have provided licensees with sufficient flexibility to compete effectively in an increasingly competitive environment.[18] Essentially, since that time, it has been assumed that licensees will behave like profit-maximizing organizations, spending whatever is necessary to acquire Canadian programming that will attract the maximum number of viewers (and therefore the maximum advertising revenues) while adhering to their exhibition requirements.

However, the elimination of the expenditure requirement has been controversial. Some argue that its elimination has been at least partially

14 Public Notice CRTC 1999-97, "Building on success – A policy framework for Canadian television," June 11, 1999.

15 Different quotas apply to French-language radio stations and non-commercial English-language radio stations. Radio Regulations, S.O.R./86-982.
In order for a musical work to count as Canadian, it generally must meet two of the following criteria:
(i) the music or lyrics are performed principally by a Canadian;
(ii) the music is composed entirely by a Canadian;
(iii) the lyrics are written entirely by a Canadian;
(iv) the musical selection consists of a live performance that is
(A) recorded wholly in Canada, or
(B) performed wholly in and broadcast live in Canada; and
(v) the musical selection was performed live or recorded after September 1, 1991, and a Canadian who has collaborated with a non-Canadian receives at least 50 percent of the credit as composer and lyricist according to the records of a recognized performing rights society.
There are special conditions for purely instrumental works. An instrumental work can qualify as Canadian if the music is composed by a Canadian or if it is an instrumental performance of a composition which had lyrics where the lyrics were written entirely by a Canadian.

16 Ibid.

17 For a general description of the Canadian program expenditure requirements for various classes of programming undertakings, see Dunbar and LeBlanc (2007).

18 Public Notice CRTC 1999-97, "Building on success – A policy framework for Canadian television," June 11, 1999.

responsible for the relative decline in spending on and in the production of Canadian programming.[19] Subsequently, in proceedings in 2009 to examine the scope of upcoming license renewals for conventional television stations, the CRTC announced that it would explore the imposition of a 1:1 ratio requirement between Canadian and non-Canadian programming expenditures.[20] While cultural sectors lobbied heavily to restore some type of minimum expenditure requirement,[21] the CRTC ultimately declined to re-impose such a requirement. It ruled that the imposition of a 1:1 ratio requirement was impracticable and inappropriate, noting in particular that the buying of programming for the upcoming broadcast year was already occurring. Nonetheless, the CRTC noted that it remained concerned about the amount spent on foreign programming relative to Canadian programming and indicated that the 1:1 ratio, or some other regulatory measure to ensure that an appropriate proportion of the financial resources of English-language television licensees is devoted to Canadian programming, should be explored in the context of the full over-the-air license renewal process with a decision to come in early 2010.[22]

In contrast to conventional broadcasters, pay and specialty services are subject to expenditure requirements.[23] These requirements have generally been imposed as conditions of licenses rather than as general regulations applicable to all pay and specialty services. In many cases, these expenditure requirements are quite significant; for example, Showcase is required to spend at least 42 percent of the previous year's gross revenues on Canadian programs,[24] while History Television has had a similar requirement of 41 percent.[25]

(iii) PRODUCTION SUBSIDIES

Another option for supporting Canadian content is the use of subsidies. Subsidies may take a number of different forms and be directed to different elements of the Canadian content production, dissemination and consumption process.

19 Indeed, the CRTC took note of this trend in Broadcasting Public Notice CRTC 2007-53, "Determinations regarding certain aspects of the regulatory framework for over-the-air television," May 17, 2007, at paragraph 81 et seq., noting at paragraph 88 that, "while spending on Canadian programming by English-language OTA [over-the-air] broadcasters [had] increased commensurately with revenues, they [had] diminished as a proportion of total programming budgets."

The Writers Guild of Canada argued in submissions to the CRTC that the average spending ratio on foreign programming relative to Canadian programming has in recent years been about nine to one (Writers Guild of Canada 2009, 5).

20 Broadcasting Notice of Consultation CRTC 2009-70, "Scope of licence renewal hearings for private conventional television stations," February 13, 2009.

21 As a whole, the Canadian television production industry (comprising, among others, representatives of performers, directors, producers and writers) are strong supporters of continuing and substantial contributions by broadcasters to the creation and exhibition of Canadian programming, which they see as part of the regulatory bargain for the privilege of holding an over-the-air broadcasting licence and a basic tenet of the obligations required by the *Broadcasting Act*. The production industry feels that sufficient contributions will not occur absent regulatory intervention and that, in fact, Canadian programming has suffered in the wake of the elimination of Canadian programming expenditures in 2000. See ACTRA (2009), in which ACTRA points out the low levels of Canadian content in Canadian broadcasters' fall 2009 schedules.

By contrast, broadcasters strongly opposed the imposition of an expenditure requirement. Some, including Canwest, noted that they are already close to a one-to-one spending ratio when its specialty holdings are taken into account. CTV and Canwest noted that they are already locked into longer-term content agreements with American studios that would preclude them from meeting a one-to-one rule in 2009 unless they dramatically increased their expenditures on Canadian programming. In this regard, it was also noted that Canadian producers could not produce new product in time for the 2009/2010 season. Broadcasters also suggested that American studios may not react well to lower bids from Canadian broadcasters, deciding instead to sell to VOD [video-on-demand] or other unregulated platforms, such as Internet platforms. CTV also pointed out a more insidious side effect of a one-to-one spending requirement: if Canadians stopped buying American programs, or bought fewer of them, all of the American programs would still get into Canadian markets via American network affiliates along the Canadian border, potentially taking Canadian advertisers along with them.

22 Broadcasting Decision CRTC 2009-279, "Renewal of the broadcasting licences for private conventional television stations considered at the April 27, 2009 Gatineau public hearing – Initial decisions and scope of subsequent policy proceeding."

23 In the same public notice in which it announced the removal of expenditure quotas for conventional broadcasters, the CRTC announced that "[t]he existing policy respecting the minimum expenditure requirements on Canadian programming is maintained for the pay and specialty television sector," noting also that "there was a general consensus that the flexible regulatory approach to pay and specialty services has been a success." Public Notice CRTC 1999-97, "Building on success – A policy framework for Canadian television." June 11, 1999, at para. 97 and 98.

24 Decision CRTC 2001-153, February 28, 2001.

25 Broadcasting Decision CRTC 2004-13, January 21, 2004.

However, for such subsidies to advance any of the plausible justifications for government intervention, criteria need to be articulated against which projects will be evaluated. In this respect, governments face a fundamental dilemma. The easiest criteria to articulate and quantify relate to qualifying domestic inputs, in terms of key personnel involved in the creative project and/or the percentage of total project expenditures incurred in Canada. However, these criteria bear no necessary relationship with the nature of the productive outputs in terms of distinctive Canadian themes, issues, beliefs, values and practices. Indeed, subsidies geared to Canadian inputs, but not Canadian outputs, create incentives for producers to attempt to appeal to as large a mass market, both in Canada and abroad, as possible, which may entail minimizing an emphasis on distinctive Canadian themes, etc., of relevance and interest to much smaller audiences.[26]

On the other hand, a granting agency that focuses on the nature of productive outputs instead of inputs faces the challenge of making subjective and highly contestable judgments about what kinds of themes, beliefs, issues, values and practices constitute Canadian culture in an increasingly pluralistic and diverse society. Perhaps because of the subjectivity involved in categorizing outputs, most cultural subsidy programs have tended to focus exclusively on the nationality of inputs.[27] For example, government subsidies and tax relief for Canadian books[28] and films[29] are awarded entirely on the basis of the nationality of production inputs with no consideration of the output created.

Moreover, however this dilemma is resolved, production subsidies do not necessarily ensure that the productive outputs will in fact be broadcast.[30] Commercial broadcasters, including the major conventional networks and specialty and TV channels, depend on advertising revenues which, in turn, are in large part a function of

26 Finn et al. present empirical findings that question the assumptions underlying this view, as they find that movies with a distinctively Canadian theme are no less likely to be commercially successful than are those without a Canadian theme (Finn, Hoskins and McFadyen, 1996). To the extent that this is true, it contradicts the assumption that producers need to water down the Canadian content in their films to appeal to mass audiences. However, the conclusions that can be drawn solely from this paper may be somewhat limited. Fundamentally, the empirical work may suffer from a methodological problem, as the authors' mechanism for identifying whether a film is distinctively Canadian is based on whether it is referred to as a Canadian film in movie reviews.

27 One notable exception to this can be found in tax relief introduced in 2007 by the British government for British films. This program takes the Britishness of both inputs and outputs into consideration in granting tax relief. To pass the cultural test used to determine whether a production is sufficiently British, a film must score at least 16 out of a possible 31 points (see Appendix "A"). Also, see http://www.ukfilmcouncil.org.uk/culturaltestpoints.

28 Through its Emerging Publisher Grants program, the Canada Council for the Arts will provide grants of between $5,000 and $30,000 to new Canadian publishers headquartered in Canada whose Canadian works, inter alia, "contain at least 50 percent Canadian-authored creative content (text or graphic)" and are characterized as either fiction, poetry, drama, a graphic novel, a publication for children or young adults or literary non-fiction. See http://www.canadacouncil.ca/grants/writing/of127227340679531250.htm.

Similarly, the Department of Canadian Heritage's Aid for Publishers program gives financial assistance to publishers for publications "either written by a Canadian author or adapted or translated by a Canadian" and printed in Canada if the publisher is "at least 75 percent Canadian-owned and -controlled in fact; [has] its headquarters and at least 75 percent of its employees based in Canada; [is] a private-sector firm or university press; [is] financially viable; and has fulfilled all contractual obligations with respect to author royalty payments or other method of payment to authors." See http://www.pch.gc.ca/pgm/padie-bpidp/dem-app/atp/atp2009-eng.cfm.

29 Tax relief for Canadian films is granted in the form of the Canadian Film or Video Production Tax Credit, which can provide a credit of up to 25 percent of eligible labour costs incurred by a Canadian corporation in creating a "Canadian film or video production." To qualify, the production must have a sufficient number of Canadians playing key roles in the production. For a live action production to qualify – i.e., not an animated production, which has its own scale – that production must score at least six out of 10 points on a scale administered by the Canadian Audio-Visual Certification Office (CAVCO). A point is awarded for a person in a key role being Canadian. Either the director or screenwriter must be Canadian and one of the two lead performers must be Canadian (see Appendix "A").

Direct subsidies for the production of Canadian films are provided by Telefilm Canada through its Canada Feature Film Fund (CFFF), which has three components: development, production, and marketing programs; the Writer's First Program; and the Low Budget Independence Feature Film Assistance Program. Each of these programs has among its requirements that the production score a certain number of points on the CAVCO scale.

30 Although, in practice, under current rules for funding from the various Canadian program funds, producers must have a broadcast window commitment.

audience size. Still, the recent dramatic proliferation of broadcasting media permits much greater differentiation of viewer interests and targeted advertising.

Nevertheless, a commercial broadcasting industry driven largely by advertising revenues may not have incentives to broadcast Canadian content that is responsive to government objectives or their rationales, including positive externalities, public goods, merit goods or infant industries. These concerns are likely to be exacerbated by the effects of economies of scale in the large US entertainment market, which means that Canadian broadcasters can often license US products for a fraction of the cost of producing comparable Canadian products and also benefit from spillovers from US publicity efforts to promote these products. This can result in lower acquisition costs, potentially larger viewing audiences and hence larger advertising-driven revenue streams (Grant 2008).

While we focus on explicit subsidies to producers of Canadian content, many of the same dilemmas arise with implicit subsidies such as capital-cost allowances or tax credits.[31] However, other taxpayers necessarily finance tax expenditures, in whatever form they take, and voters may be resistant to higher taxes to finance such projects.[32]

With explicit subsidies, the source of the financing is susceptible to a wider range of possible responses. As with tax expenditures, explicit subsidies could be entirely financed from government revenues raised through the tax system. Alternatively, or in combination, they could be financed through levies on all or some subset of economic agents in the broadcasting industry, perhaps premised, at least in the past, on the fact that spectrum scarcity (real or artificial) has generated profits that can be appropriated (taxed), at least in part, to finance production subsidies.[33]

Despite the problems surrounding subsidies, they are extensively used as a mechanism for promoting national cultural content. First are measures that involve private expenditure requirements or industry contributions to production funds. The Canadian Media Fund (Fund),[34] for example, helps to finance the development, production and broadcast of Canadian-made programming in both official languages as well as in Aboriginal languages. Since the mid-1990s, broadcasting distribution undertakings (BDUs) such as cable and satellite providers have been required to contribute between 1.5 percent and 5 percent of their revenues to production funds, with 80 percent of that money earmarked for the Fund.[35]

For the 2007/2008 fiscal year, BDUs contributed $165 million to the Fund.[36] More recently, the CRTC has established the Local Programming Improvement Fund, which is intended to help improve local programming (particularly news broadcasts) in smaller markets.[37] Financial support for this program will come from mandatory contributions from cable and satellite providers, which are required to contribute 1.5 percent of their gross revenues from broadcasting activities. In the 2009/2010 broadcast year, this amount is expected to be about $100 million (CRTC 2009a). Additionally, the governments of Ontario and Quebec make available support for educational channels and cultural enterprises such as TVO and

31 For a more thorough discussion of tax relief as a form of indirect aid for cultural industries, see Schuster (1999) and O'Hagan (2003).

32 For an empirical analysis of voter information and degree of support for arts funding in Ontario, see Morrison and West (1986). For a similar analysis of predictors of support for public subsidies for the arts among the American public, see Brooks (2001). For a similar analysis in Australia, see Withers (1979).

33 Some have also argued that some sectors, such as the broadcasting distribution sector, enjoy such high penetration into Canadian households that they are a virtual proxy for a general tax.

34 Formerly the Canadian Television Fund, it is in the process of being combined with the Canada New Media Fund. The new fund, which was announced by the Canadian Heritage Minister, James Moore, will formally launch on April 1, 2010 (Canada 2009).

35 Such contributions are not generally required of programming undertakings, except as benefits imposed as a condition of approval of the acquisition of a programming undertaking, since these undertakings already have Canadian programming expenditure obligations.

36 See the Canadian Media Fund's website, at http://www.ctf-fct.ca/ctf_home_en.html.

37 Broadcasting Regulatory Policy CRTC 2009-406, "Policy determinations resulting from the April 27, 2009 public hearing," July 6, 2009.

TFO (Ontario's French-language network) and Télé-Québec.

Tax incentives are a second way of promoting the production of Canadian content.[38] The Canadian Film or Video Production Tax Credit, a fully refundable credit available at a rate of 25 percent of qualified labour expenditures, is meant to encourage Canadian programming and to stimulate development of an active domestic production sector. The government created the similar Film or Video Production Services Tax Credit, available at a rate of 16 percent of qualified Canadian labour expenditures, as an incentive for taxable Canadian or foreign-owned corporations that have a permanent establishment in Canada and whose activities are mainly in film or video production or production services to employ Canadians.[39]

(iv) FOREIGN OWNERSHIP RESTRICTIONS

Another policy tool to promote Canadian content is the imposition of ownership restrictions, based on the view that domestic firms have a greater interest in promoting domestic culture than do foreign firms. However, this proposition is by no means self-evidently true, and has not gone unquestioned (Grand and Wood 2004).

Regardless, restrictions on the sale of cultural enterprises to foreigners are extensive. In Canada, the *Investment Canada Act*[40] prohibits certain investments in cultural industries unless the investment is likely to be of "net benefit" to Canada. To clarify what constitutes a "net benefit" in cultural industries, the government has issued guidelines establishing specific rules for permissible foreign investments. For example, in the periodical publication industry consideration is given to undertakings with respect to both the extent of Canadian editorial content as well as the creation of Canadian jobs and expansion of the industry.[41]

These guidelines often place significant restrictions on the foreign sale of cultural industries. For example, the purchase of existing Canadian book publishers by foreign actors is prohibited except in exceptional circumstances (Canada 1992). With respect to the film industry, the takeover of Canadian-controlled film distribution businesses is prohibited and foreign investors can establish new film distribution businesses only where the new business imports or distributes proprietary products (Canada 1988).

Restrictions on foreign control of broadcasting are even more firmly entrenched.[42] Section 3(a) of the *Broadcasting Act* specifies that "the Canadian broadcasting system shall be effectively owned and controlled by Canadians." A federal Cabinet direction to the CRTC[43] sets out the criteria for a "qualified corporation." Before a broadcasting

38 See the website of the Office of the Commissioner of Official Language, at http://www.ocolclo.gc.ca/html/ stu_etu_012009_p5_e.php.

39 See the website of the Canadian Audio-Visual Certification Office, at http://www.pch.gc.ca/pgm/bcpac-cavco/index-eng.cfm. Note that some provinces also offer similar tax credits.

40 R.S.C.1985 (1st Supp.), c. 28.

41 The policy specifies the following:

i. Net benefit will include, inter alia, undertakings by foreign investors that result in a majority of original editorial content for the Canadian market in each issue of each periodical title. The amount of original content for the Canadian market will be determined as a percentage of the total space occupied by the total editorial content contained in the periodical.

Original editorial content means non-advertising content that is:

a. authored by Canadians, including, but not limited to, writers, journalists, illustrators and photographers; or

b. created for the Canadian market and does not appear in any other edition of one or more periodicals published outside Canada.

ii. Net benefit may also include undertakings by the foreign investor such as:

- creating an employment infrastructure by directly employing an editorial and support staff composed of persons resident in Canada with respect to the investment and to establish or expand a place of business in Canada.
- supporting the infrastructure in the publishing sector by having their titles edited, typeset and printed in Canada.

See http://www.pch.gc.ca/invest/prd-eng.cfm.

42 For a more detailed discussion of restrictions on the ownership of Canadian broadcasting undertakings than is possible here, see Buchanan and Salzman (2008).

43 *Direction to the CRTC (Ineligibility of Non-Canadians),* SOR/97-192.

license is issued, that corporation must be incorporated or continued under the laws of Canada or a province, where

(a) the chief executive officer or, where the corporation has no chief executive officer, the person performing functions that are similar to the functions performed by a chief executive officer, and not less than 80 percent of the directors are Canadians;

(b) in the case of a corporation having share capital, Canadians beneficially own and control, directly or indirectly, in the aggregate and otherwise than by way of security only, not less than 80 percent of all the issued and outstanding voting shares of the corporation and not less than 80 percent of the votes.[44]

These restrictions apply equally to all broadcasting undertakings, including conventional television and radio, pay and specialty, and broadcasting distribution undertakings.

A number of other countries also place foreign ownership restrictions on broadcasters.[45] For example, the United States limits the foreign ownership of broadcasters requiring a station license (i.e., not including what Canadians call "specialty services") to 20 percent of the shares of the broadcaster.[46] However, foreign ownership restrictions are by no means universal, and many countries that previously had such restrictions have moved in recent years to lift them. In the United Kingdom, the 2003 *Communications Act* lifted restrictions that had previously been in place on the foreign ownership of analog television broadcasters and radio broadcasters.[47] Similarly, in 2006 Australia repealed sections of the *Broadcasting Services Act* 1992 that had previously limited foreign ownership interests in commercial broadcasters to 20 percent.[48] New Zealand moved even earlier in this respect, as it has placed no restrictions on foreign ownership since the deregulation of broadcast media in the 1980s and 1990s.[49]

However, with respect to cable and satellite providers, or broadcasting distribution undertakings (BDUs), Canada's ownership restrictions are much more exceptional when viewed in a comparative context, as noted in the following government analysis:

> [T]here is a trend toward relaxing foreign ownership restrictions in the broadcasting industry for the broadcasting distribution undertakings (BDUs). BDUs are increasingly treated like all other telecommunications infrastructure that can be effectively regulated independently of the national origin of the controlling shareholder. In that regard, Canada is out of step with the rest of the international community as it is the only developed country that continues to place foreign investment restrictions on BDUs. Countries such as the United States, France, Germany, Italy, Spain, Spain, United Kingdom, Australia, Japan Austria, Belgium, Denmark, Finland, Ireland, Netherlands, Norway, Portugal, Sweden, and Switzerland have no foreign ownership restrictions on cable distributor undertakings. (Canada 2003.)

44 Ibid. Where the corporation is a subsidiary, additional rules apply to the subsidiary corporation's parent. Significantly, the direction also generally prohibits control by a non-Canadian by any means, even if requirements respecting the composition of the board of directors, beneficial ownership, control of voting shares and CEO citizenship are otherwise met.

45 For an overview of these restrictions, see McEwen (2007).

46 The *Communications Act* of 1934, as amended, 47 USC. § 151, at § 310(b)(3). For a more detailed discussion of these ownership restrictions, see United States (2004).

Perhaps most famously, the foreign ownership restrictions in §310 led Australian broadcasting mogul Rupert Murdoch to renounce his Australian citizenship so that his ownership stake in the Fox network did not violate these provisions. For a brief discussion of that case, see Cho (2007, 123).

47 *Communications Act* 2003 (UK), 2003, c. 21. Even before the 2003 Act, there were no foreign ownership restrictions on cable or digital terrestrial services.

48 These provisions were previously found in the *Broadcasting Services Act* 1992 (Cth.), s. 57. They were repealed by the *Broadcasting Service Amendment (Media Ownership) Act* 2006 (Cth.). However, foreign takeovers of Australian broadcasters are still governed by the generic rules applicable to all Australian firms in the *Foreign Acquisitions and Takeovers Act* 1975 (Cth.).

49 For an overview of New Zealand's policy on foreign ownership in broadcasting, see McEwen (2007).

Table 2: International Public Funding of Public Broadcasting, 2007

Country	Total Public Funding *(C$ million)*	Public Funding per Capita *(C$)*
Australia	915.1	43.58
Austria	661.3	79.67
Belgium	635.5	62.08
Canada – CBC	**1,114.0**	**33.78**
Denmark	746.2	135.67
Finland	566.2	106.83
France	4,015.1	65.07
Germany	10,722.8	130.29
Ireland	287.5	65.34
Italy	2,332.9	39.34
Japan	6,060.0	47.45
New Zealand	40.5	10.04
Norway	685.0	145.74
Spain	1,281.3	28.29
Sweden	988.0	108.57
Switzerland	1,003.8	133.84
UK	7,541.1	123.62
US	1,213.6	4.02
Average		**75.79**

Source: Grant (2008, Appendix 2, page 2).

(v) PUBLIC OWNERSHIP

Public broadcasting is another instrument for producing Canadian content in line with the policy objectives of the *Broadcasting Act*. Canada's national public broadcaster is the CBC/Radio-Canada, whose television services include CBC Television, CBC News Network, Bold (a subscription-based, digital television service), Documentary (also a subscription-based, digital television service), Télévision de Radio-Canada and Réseau de l'information de Radio-Canada.[50] The *Broadcasting Act* stipulates that the mandate of the CBC includes television programming that is "predominantly and distinctively Canadian" and contributes "to shared national consciousness and identity."[51] While funding for the CBC comes from various sources, the two largest contributions are the Parliamentary Appropriation for Operations ($930 million in the 2007/2008 fiscal year) and advertising and program sales ($329 million in the 2007/2008 fiscal year).[52]

The strategic direction of the CBC specifically includes becoming "the most important creator and distributor of Canadian content across all media platforms."[53] In addition to the CBC, provincially funded broadcasters also support the production of Canadian television content. In Ontario, for example, TVO is a publicly funded broadcaster of educational media, available to

50 See the CBC website at http://cbc.radio-canada.ca/about/pdf/services.pdf.

51 S.C. 1991, c. 11, ss. 3(1)(l) and (m).

52 See CBC website at http://www.cbc.radio-canada.ca/about/pdf/do.pdf.

53 Ibid.

virtually all homes in the province. The bulk of its funding comes from an annual provincial operating grant ($37.5 million in 2008).[54] TVO devotes approximately 80 percent of its programming budget to Canadian content, the majority of which it produces itself.[55]

Still, Canada's per capita public expenditure on its national public broadcaster is well below other countries' expenditures in this regard as can be seen from Table 2.

Of course, providing Canadian public broadcasters with more money means either higher taxes or the imposition of direct levies. For example, the British Broadcasting Corporation, one of the best-funded public broadcasters per capita in the world, is financed by an annual license fee levied on all televisions in the UK. This license fee is currently set at £142.50 (about $240) for a colour television and £48 (about $80) for a black and white television per year.[56]

Public ownership has both strengths and limitations. One strength is that Canadian cultural content may not need to be articulated with great explicitness and can be adapted and redefined on a flexible, ongoing basis in response to changing political and social perceptions. However, the public broadcaster may not be as efficient as private broadcasters, and there may be concern about the potential for political manipulation of content for partisan or ideological reasons. It could be argued that to ensure the availability of a diversity of programming,[57] there is merit in having a diverse group of broadcasters, both public and private, commissioning content.

(vi) ACCESS RULES

Access rules, which impose requirements on cable and satellite providers to carry particular channels, also play a significant role in ensuring the availability of Canadian content. In addition to general access requirements, there are also specific rules relating to packaging of channels that are designed to promote Canadian programming.

Under the current Broadcasting Distribution Regulations (BDU Regulations), there are a variety of different types of channels, each of which are subject to different carriage rules.[58] While access rights vary based on factors such as the BDU's size, capacity and distribution technology, the largest classes of cable and satellite carriers are required to carry a broad range of television channels, including local television stations, certain other over-the-air broadcasters and certain, so-called Category 1, specialty channels. Only Category 2 pay and specialty services have no guaranteed access rights and must negotiate with the cable and satellite providers to gain distribution.[59]

However, while there are no rules mandating access for Category 2 pay and specialty services, there are regulations that govern how those services can be bundled together. Specifically, for every non-Canadian specialty service offered in a package, there must be one Canadian specialty service and, for every five non-Canadian pay

54 TVO also receives some ongoing corporate funding, as well as corporate and individual donations.

55 See TVO website at http://www.tvo.org/cfmx/tvoorg/about/index.cfm?page_id=886#subSection_3.

56 See http://www.bbc.co.uk/info/licencefee/.

57 This requirement is in line with Canadian broadcast policy objectives for "a wide range of programming that reflects Canadian attitudes, opinions, ideas, values and artistic creativity" (*Broadcasting Act*, S.C. 1991, c. 11, s. 3(1)(d)(ii)).

58 *Broadcasting Distribution Regulations,* SOR/97-555. Category 1 specialty services are a limited number of channels that have been determined by the CRTC to "make a strong contribution to the development, diversity and distribution of Canadian programming," and as such are afforded access privileges. Category 2 pay and specialty services "include services offering niche programming to particular audiences, services that provide multiple viewing opportunities for particular types of programming and services that repackage existing programming in creative ways," and which do not have guaranteed access rights. See Public Notice CRTC 2000-6, "Licensing framework policy for new digital pay and specialty services," January 13, 2000.

59 While current rules are rather detailed, these rules would be simplified by amendments proposed by the CRTC. Proposed amendments to the BDU Regulations, to be implemented August 31, 2011, will replace the variety of channels described above with only two categories of services: Category A and Category B. Category A services will include services with access rights under the current BDU Regulations, while Category B services will include services that are not guaranteed access rights under the current BDU Regulations. See Broadcasting Public Notice CRTC 2008-100, "Regulatory frameworks for broadcasting distribution undertakings and discretionary programming services," October 30, 2008.

services, there must be one Canadian pay service. In addition, there are more detailed rules for French-language and third-language services.[60] These rules ensure that Canadian viewers receiving specialty and pay services must also receive a particular percentage of Canadian television stations.

In addition to these specific requirements, Section 9 of the BDU Regulations contains a general non-discrimination provision, which states that "[n]o licensee shall give an undue preference to any person, including itself, or subject any person to an undue disadvantage."[61]

Competition policy could be used as an additional mechanism to promote access to Canadian content on television. Producers of Canadian content facing difficulties in having their programming broadcast could, depending on the factual circumstances, seek relief under the refusal to deal or abuse of dominance provisions of the *Competition Act*.[62]

PART II
Technological Change

Having examined the objectives and rationales for Canadian content policies as well as the instruments that have been relied upon historically for the promotion of Canadian content, we turn now to the impact of technological change. First, we sketch four technological developments – and consequent economic changes – that will impact the effectiveness of instruments that promote Canadian content. These states are the "over-the-air broadcast era," the "500-channel era," the "wired IP (Internet Protocol) era" and the "wireless IP era."

Of course, these four states do not arise in a discrete sequence, but rather blend with one another over time. While we highlight the technological and economic features of all four developments, we focus most on the transition from the second to the third state, as this most closely tracks the present changes in broadcasting and telecommunications.

The Over-the-Air Era

The first technological stage is the over-the-air broadcast era, which prevailed from the beginning of television broadcasting until cable television became dominant. In this world, broadcasters provided television to consumers through over-the-air transmission using very-high frequency (VHF) and ultra-high frequency (UHF) spectrum. There is genuine spectrum scarcity in this mode of transmission, and only a handful of channels could be broadcast. Spectrum scarcity meant that markets were not perfectly competitive, and broadcasters could earn scarcity rents.

The 500-Channel Era

The second stage is the "500-channel" cable/satellite era. In this stage, broadcasters no longer rely solely on basic over-the-air technology to send signals to viewers, but rather primarily count on BDUs that send signals over a cable network, or on satellite technology. In many respects, this technological stage most closely resembles the current Canadian situation,[63] as the great majority of consumers watch television primarily through subscriptions to packages provided by cable or satellite providers.[64]

Spectrum scarcity is not a significant constraint with this technology. Hundreds of channels can be

60 Broadcasting Public Notice CRTC 2007-51, Distribution and linkage requirements for Class 1 and Class 2 licensees.

61 SOR/97-555, s. 9.

62 R.S.C. 1985, c. C-34.

63 In fact, according to the CRTC, in 2008, there were approximately 707 television services offered in Canada. Of these, 24 percent were from conventional television providers, and 29 percent were Canadian specialty, PPV and video-on-demand. The remaining 47 percent were community-related services and non-Canadian satellite services (CRTC 2009b, 115).

64 It should be noted that high penetration of BDUs is by no means universal. The OECD Communications Outlook 2009 lists several prominent countries where more than 50 percent of residents still receive signals over-the-air, including Italy, Spain, Portugal and France (OECD 2009, 191).

sent to viewers' homes without interfering with one another.[65] Access to television services generally, however, is constrained by the limited number of networks. The choices are largely cable and satellite, and there may be relatively limited competition between these providers.

Despite the increased choices that consumers face, this technological state still resembles the over-the-air era in one important respect. In the 500-channel era, television content, while generated by a more competitive market for television channels, is still typically "pushed" onto consumers. Consumers may have a choice of programs among hundreds of channels, but they cannot view something that is not being played on any of those channels. Except for emergent video-on-demand (VOD) offerings that generally remain limited in content choice, consumers cannot watch a program of their choosing at the time of their choosing. While consumers can view content on demand in non-broadcast formats such as on DVDs, Blu-ray and videocassettes, accessing content using these media is relatively more costly in comparison to broadcast media.

The Wired IP Era

The third stage, into which we appear to be currently transitioning, involves viewers accessing content over the Internet, such as via Internet Protocol television (IPTV) technology. In this stage, viewers are able to access virtually all content on demand, with the attenuated "push" model of the second stage being replaced increasingly with a "pull" model of access to content. Spectrum scarcity is essentially non-existent in the IPTV stage.[66] In this world, cable networks and telephone landline providers[67] are dominant in providing Internet access and therefore access to content. Given the changes taking place as technology moves toward this third state, we now discuss in some detail the related technological and structural changes.

(i) THE PHENOMENON OF TECHNOLOGICAL CONVERGENCE

The defining technological characteristic of the wired IP era is the phenomenon of technological "convergence," which refers to the communication of content (be it voice, audio, audio-visual or data/text) across multiple platforms (including televisions, PCs, gaming platforms and handheld wireless devices such as mobile phones, iPods and BlackBerries) through multiple conduits or networks (such as cable, telecom and wireless).[68] Convergence has been and continues to be driven by the emergence and development of Internet Protocol network transmission technology and sophisticated electronic devices for receiving content, as well as by consumer demand for alternatives to traditional content consuming methods. IP technology standardizes the transmission of content, where voice, audio, video and text are digitized into data packets capable of being transmitted across networks with different underlying technologies.[69] Thus, for

65 That said, the spectrum capacity supported by existing cable plant and satellite transponders is ultimately finite and can only be expanded by technological improvements or significant new capacity builds. In addition, increasing demand for new services, and particularly services in the more bandwidth-intensive high definition format, continue to put pressure on network capacity.

66 The "pull" approach provides for a much more efficient use of bandwidth in distribution networks than the "push" model, which sees the continuous transmission of all channel offerings in a distributor's channel line-up, even where the subscriber was only viewing one channel.

67 Telephone companies face significant capital pressure to upgrade their copper-based voice networks to support high-speed broadband, creating significant challenges for a sustainable business model to support such investments.

68 The term "convergence" has been a buzzword for many years in the communications, media and entertainment industries, but often its meaning is taken as being understood or self-evident. In general terms:

> The driving force of convergence is the ideal of information, communication and entertainment anywhere, on any network, on any device. Digital convergence presents a world where information and content is digitized, personalized and accessible 'on-demand' via multiple fixed and mobile platforms and devices. Information follows you around and is available when and where you want it on a variety of devices, rather than being accessible only at certain times and specific places. (Intellect 2008, 2.)

69 In terms of technological advancements, the CRTC describes the impact of IP in its Communications Monitoring Report:

> The deployment of high-capacity digital networks and the emergence of Internet Protocol (IP) as the standard for data transmission and delivery have facilitated the carriage of multiple types of data on a single network; this has been a major enabler of network convergence. Today's unified data networks are capable of delivering all forms of information, be it voice, data, text or video. (CRTC 2009b, 71.)

example, operators of cable, telecom and wireless networks, with sufficient capital investments, are all able to transmit telephony, video, audio and data across their respective networks.[70]

Simultaneously with advancements in network transmission technology, significant developments have occurred with respect to the platforms, or devices, on which content is consumed. In addition to traditional content display devices such as televisions and radios, content may now be consumed on new fixed devices such as PCs and gaming platforms, as well as on new mobile devices such as MP3 players/iPods, mobile phones and personal digital assistants/BlackBerries. In addition "Internet" TVs are just coming to market. A senior representative of the CRTC comments that "technology has now enabled ubiquity of content on all platforms. That is, we can now see and interact with content on virtually any device" (Anani 2008). While each new generation of device tends to have increased functionality at lower price points, many devices use proprietary software (e.g., iPods) and/or are exclusive to a particular network provider, limiting content choice among devices of a particular type and cross-network functionality.

Beyond the existence of new network technology and devices, several prerequisites exist if consumers are fully to experience convergence. They require foremost Internet access with sufficient bandwidth.[71] In 2008, 94 percent of Canadian households had broadband access, with 69 percent of these households actually subscribing to the service (CRTC 2009b, 213). That said, consumers in remote and/or rural areas have historically been underserved with broadband, and even for those consumers that do have access, "[m]any Internet Service Providers (ISPs) place a cap on how much bandwidth may be used per month, with excess-usage charges applying if that amount is exceeded" (Two Solitudes Consulting 2008, 65).

The shift to IP technology characteristic of convergence increasingly is straining network capacity and infrastructure. As a result, the challenge becomes how to fund the growth, expansion and modernization necessary for today's bandwidth-intensive applications and, more particularly, to determine who will pay for these capital expenditures.

(ii) CASE STUDIES IN TECHNOLOGICAL CONVERGENCE

Technological convergence is already leading to significant changes in how individuals interact with content. We now outline recent trends in online audio-visual content that are posing a threat to television broadcasters and distributors.

As a result of convergence, audio-visual content is now available to consumers on new platforms and through new conduits/networks, all in digital form and all distributed using IP technology. Most similar to traditional television viewing is IPTV[72] where only the program selected by the consumer is streamed down the distribution pipe.

It is expected that IPTV will evolve to provide greater functionality and interactivity than versions currently on the market. IPTV is still in the early stages of deployment and in 2008 was only available to approximately 10 percent of Canadian consumers (CRTC 2009b, 224), with offerings currently from MTS Allstream, SaskTel, Telus and BellAliant in their respective territories.

70 See, e.g., Anani (2008): "A single provider can offer data, television, and fixed and mobile voice services."

71 The CRTC explains:

> Broadband speeds are required for real-time and rich media applications such as digital voice, audio, video, high-resolution photographs and others. Without broadband access, the current crop of video applications would not be feasible since the high volume of data that must be transferred from a host server to a PC or other device would take so long as to make the experience unacceptable. (CRTC 2008, para. 46.)

72 The CRTC explains:

> Internet Protocol Television (IPTV) is television content that, instead of being delivered through traditional formats, is received by the viewer through the technologies used for computer networks. This is to say that the digital television content is formatted using IP and is typically supplied by a broadband operator, such as a telephone company, using digital subscriber line, version x (xDSL) technology over a network infrastructure. (CRTC 2006, Appendix 1, para. 147.)

Table 3: Availability of Online Broadcasting Content (January 2008)

		Canadian Broadcaster Websites	US Broadcaster Websites
		(percent)	
Simulcasting	Canadian programs	17	0
	American programs	0	6
Full episodes	Canadian programs	42	13
	American programs	19	63
Episode clips	Canadian programs	61	11
	American programs	19	56
Ancillary content (webisodes and interviews)	Canadian programs	44	19
	American programs	17	94

Source: CRTC (2008, para. 92).

However, the Internet is an increasingly significant mechanism through which consumers can assess audio-visual content beyond simply IPTV, as the CRTC explains: " [O]nline media consumption [is] increasing, while traditional broadcasting consumption has declined in the past several years. … In 2007, over 50 percent of Canadians with Internet access downloaded videos from the Internet (23 percent at least once a week)[CRTC 2008, para. 64]."

Audio-visual content is available online from three principal sources: (i) broadcaster websites; (ii) media aggregators such as YouTube and Google Video (both owned by Google) and Hulu that distribute video content created and/or provided by third-party sources; and (iii) online video stores, such as iTunes. The first two types of sources largely stream content to consumers for free, sponsored by advertisements (although some subscription services do exist). In contrast, with online video stores content is largely purchased and then downloaded, rather than streamed to the consumer's computer or portable electronic device (e.g., iPod).[73] In all cases, the content may be professionally created, either specifically for online distribution or repurposed from content developed for traditional distribution platforms, or created by users as a form of personal expression and/or with the intention of monetary gain.[74] Regardless of the source of audio-visual content, licenses in conjunction with technology may restrict access to content, especially professionally created content, to consumers in territories covered by the licence, as discussed in greater detail below.

With respect to online audio-visual content provided by broadcasters, Table 3, above, compares the types of content available on Canadian and US broadcaster websites. As shown in the table, a variety of Canadian and non-

73 The CRTC reports that viewing audio-visual content on portable electronic devices (not including mobile phones) is not yet a widespread practice, although it has been growing and can be expected to continue to increase:

"Video MP3 players, such as the iPod, are also not being used extensively as video viewing platforms. In 2008, 14 percent for Anglophone Canadians and 10 percent for Francophone Canadians reported owning a video-capable MP3 player (up from 9 percent and 6 percent respectively in 2007). Only 1 percent of Canadians reported watching video on these devices in the preceding month."(CRTC 2009b, 177.)

74 The CRTC reports that "[p]resently, a significant amount of professionally produced content found online has been repurposed from content developed for distribution on traditional platforms (CRTC 2008, para. 123)."

Canadian content is available on Canadian broadcaster websites, with 42 percent of such websites offering full episodes of Canadian programs and 61 percent offering episode clips of Canadian programming. In fact, in all cases Canadian content is much more prevalent on the websites of Canadian broadcasters than is American content.

Convergence is putting significant pressure on traditional broadcasters. The CRTC states that convergence "has put in considerable doubt the ongoing viability of the advertising model used by conventional television (CRTC 2006, para. 267)." In particular, audience fragmentation has resulted in a redistribution of advertising revenue among content distributors. Even those broadcasters that seek to capitalize on online programming distribution face significant challenges retaining advertising. With geospoofing "a consumer by-passes the domestic rights holder and instead obtains content out-of-market," undermining the broadcaster's existing advertising model (Two Solitudes Consulting 2008, 27). Thus, according to the CRTC, "the old business models built on control of rights are increasingly less relevant (Anani 2008)."[75]

In addition, broadcasters also face significant costs with online content distribution. Unlike traditional broadcasting, where distribution costs are largely fixed,[76] and the incremental cost of serving additional viewers is negligible, costs to distribute content online actually increase in proportion to viewership.[77]

Nevertheless, significant opportunities exist for broadcasters to access new revenue streams in a converged environment. For example, the Internet allows broadcasters to distribute content (such as cast interviews, behind-the-scenes clips, etc.) that can be used to leverage increased viewership of programming on traditional platforms. Indeed, "[a] 2008 Decima Research study reported that the vast majority (80 percent) of respondents who view television programming on the Internet consider it to be complementary to traditional television program viewing, while nine percent of respondents consider it to be a replacement to traditional television program viewing (CRTC 2008, para. 80)." Other content viewing platforms, such as mobile phones, game consoles and MP3 players/iPods, similarly offer potential new revenue streams to broadcasters. However, the possibility remains that online content in the future will increasingly replace rather than complement traditional broadcasting content.

(iii) ORGANIZATIONAL TRENDS RESULTING FROM TECHNOLOGICAL CONVERGENCE

The ability to transmit a full range of content, whether voice, audio, video or text across disparate networks using standardized IP technology has resulted in "blurring of the traditional distinction between a telecommunications company and a cable company [as] manifested by traditional telephony companies offering broadcasting services and cable companies adding telecommunications services, such as Internet and telephony, to their service offerings (CRTC 2008, para. 67)." In other words, cable and telephone companies each increasingly offer a full range, or "quadruple play" of communications services – telephony, broadcasting distribution, Internet access and

75 The CRTC elaborates:

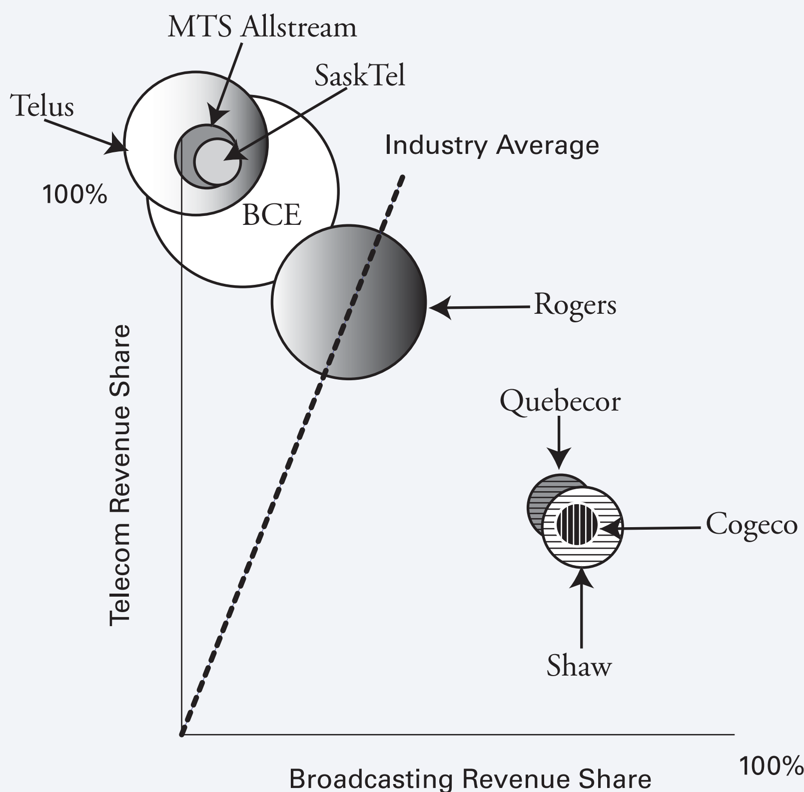
> For example, in today's environment, US producers and rights holders can reach Canadian consumers directly via unregulated Internet and mobile platforms rather than through a Canadian broadcaster "middleman." This bypass of Canadian broadcasters may result in a breakdown of the Canadian rights market and may significantly erode support for Canadian content by eroding the cross-subsidy essential to its support, at least in the English market. (CRTC 2006, para. 272.)

76 In addition, for BDU distribution, the major share of distribution costs is actually paid by BDUs.

77 Two Solitudes Consulting explains:

> As with conventional distribution, alternative content distribution cost is also impacted by content. The better the quality of image that is being transmitted, the more it costs. But cost can also be impacted by the level of consumption. Most alternative content delivery is a one-to-one model, and the content must be transmitted once for each viewer. The more viewers, the more it costs. (Two Solitudes Consulting 2008, 23.)

Figure 1: Revenue Composition of Canadian Communications Companies



Note: bubble size represents total telecommunications and broadcasting revenues.
Source: CRTC (2009b, 79).

wireless. In this regard, Figure 1, above, shows the split between telecom and broadcasting revenues for eight of Canada's major communications companies.

Not only are cable and telephone companies converging in terms of their service offerings, but they and other media companies are converging across different levels of the media production and distribution chain. BDUs have acquired interests in broadcasters – for example, Rogers' recent acquisition of Citytv and Bell Canada Enterprises (BCE)'s 15 percent interest in CTVglobemedia. BDUs also hold varied interests in specialty and pay-per-view television channels. Broadcasters, in turn, similarly hold wide-ranging interests in specialty and pay-per-view channels. Broadcasters may also hold interests in content production companies, with Canwest's acquisition of Alliance Atlantis a well-known example.

The Wireless IP Era

In the fourth stage of technological development, mobile devices such as cellphones and personal digital assistants (e.g., BlackBerries) will see their importance increase as a platform for the consumption of audio-visual content. In the mobile context, a distinction is drawn between so-called "on-deck" content, which is offered by wireless carriers, and "off-deck" content, which a user accesses from the mobile version of a broadcaster or aggregator website using the wireless network of the carrier. The content itself is streamed to the device and may consist of professionally created television programs or clips or other video content. In this regard, Table 4 below indicates that a significant percentage of content offered by wireless carriers in Canada is Canadian.

In contrast to online access, fees for accessing content such as subscription fees and pay-per-use fees are more common in the wireless context

Table 4: Percentage of Canadian Content in Mobile Audio-visual Offerings (April 2008)

	Mobile TV *(percent of total shows offered)*	Video-on-Demand *(percent of channels offered)*	Radio *(percent of channels offered)*
Bell Canada	42	52	22
Rogers Communications	57	35	15
Telus Communications	45	Not available	14

Source: CRTC (2008, para. 111).

where these fees are in addition to the data transmission fees. This cost factor, along with long-term wireless contracts that slow switching to data plans and mobile devices with new functionality, has slowed adoption of wireless audio-visual content consumption. As the CRTC states:

> Viewing of video over cellphones has shown slow growth thus far. Services being offered by the large national carriers are still in their infancy and not all handsets are capable of displaying video content. BBM Analytics' Media Technology Monitor (MTM) reported that, in 2008, 18 percent of Anglophone Canadians and 13 percent of Francophone Canadians owned a video enabled cellphone. Only five percent of Anglophones and two percent of Francophones had viewed video on their cellphones in the past month, although this did represent an increase from two percent and one percent, respectively. All this translates to less than one percent of Canadians having watched television programming on their handsets in the past month. (CRTC 2009b, 177.)

Nevertheless, as it continues to develop in importance, especially by newly licensed Canadian wireless service providers, the wireless IP era will eliminate much of the scarcity that afflicts stages two and three. As Internet service makes use of more advanced wireless technology, the possibility of a larger number of Internet network providers and robust competition could eliminate or reduce "scarcity" or market power issues among networks. Wireless technology, by eliminating the costly last mile of delivering Internet service, allows the proliferation of broadband networks, thus mitigating concerns about market power. There will remain spectrum scarcity even with respect to the last mile, given that spectrum by its very nature is a finite resource. But relying on wireless spectrum will enhance competition significantly relative to wired networks. A number of factors – including network capacity constraints, high consumer costs and a limited number of providers – currently preclude the realization of this fourth state of the world for the immediate future.

PART III
Changing Technology and Current Policy Instruments

We turn now to the impact of technological change on the efficacy, or practicality, of different instruments upon which Canadian regulators have traditionally relied. As a preliminary matter, it is helpful to recall our characterization of the four stylized technological states: the over-the-air era; the 500-channel cable/satellite era; the IPTV wired era; and the IPTV wireless era. The impact of the instruments will vary over these states. It is worth re-emphasizing that, of course, the states do not arise in a discrete sequence, but rather blend with one another over time. For expositional purposes, however, we initially treat the states as four distinct technological eras and later discuss the impact of transitions between them.

Stage I: Canadian Content Regulation in the Over-the-Air Era

For a number of reasons, the over-the-air era is clearly the most suitable for regulating and encouraging Canadian content. Canadian content exhibition quotas, for example, are particularly

effective in such a world. There are two possible objectives for implementing such quotas – to have Canadian programming available for Canadian viewers and to ensure that Canadians actually watch Canadian programming. Both objectives are achievable in the over-the-air scenario. There are only a handful of channels, which eases the regulator's burden in ensuring compliance with Canadian content quotas. And with limited choice, enforced quotas enhance the probability that Canadians will actually watch the Canadian programming.

With fewer broadcasters, fewer Canadian programs must be produced to satisfy Canadian content requirements. With fewer shows, a smaller pot of money is required to produce high-quality Canadian shows, rendering production subsidies potentially more effective. A $100 million production subsidy fund will likely lead to higher quality programming if only 10 shows have to be produced than if 100 shows must be produced. With a small handful of over-the-air channels, Canadian ownership restrictions are likely to be relatively feasible to impose. Scarcity increases the rents that broadcasters are likely to realize. Even if Canadian ownership creates a higher cost of capital by precluding more efficient ownership structures, scarcity rents better allow broadcasters to absorb these costs.

The over-the-air era also has two advantages for the public broadcaster. First, to the extent that advertisers fund programming, the lack of competition in this technological stage is a benefit: the public broadcaster earns scarcity rents that defray the cost of Canadian programming. Second, if the purpose of Canadian content provisions for a public broadcaster is to ensure that the programming is actually seen, the limited amount of competition for public broadcasters in the over-the-air stage is the most favourable of any of the stages.

Finally, access to networks, a potentially important regulatory tool in later technological stages, is not important in the over-the-air stage. Broadcasters do not require networks, but rather send their signals directly to viewers. This had its drawbacks in that only a limited number of broadcasters were available, but from a regulatory perspective, this renders access issues irrelevant.

Stage II: The "500-Channel" Era

Canadian content exhibition quotas continue to be potentially effective in the 500-channel era. While viewers have an increased choice among channels,[78] it remains open to regulators to impose on broadcasters an obligation to show a certain percentage of Canadian programs.

However, in a world of specialty channels a Canadian theme may itself be difficult to identify for some kinds of programming. It might be difficult, for example, to define an identifiably Canadian cooking show. Canadian content quotas in practice, however, have historically not depended on "output" measures of Canadian-ness, but rather on the Canadian-ness of the "inputs" (actors, directors etc.). Canadian content quotas, at least as they have been applied historically, remain effective even in a world of specialty channels.

The emergence of VOD in the 500-channel era, however, represents a potential hurdle for Canadian content requirements. To the extent that exhibition quotas are effective by focusing on certain time periods, the availability of VOD and other time-shifting technology like personal video recorders (PVRs) and before that VCRs may undermine them. Whatever obstacle such technology poses in the 500-channel era, this hurdle will grow significantly with the transition to "pull" broadcasting in stage three, as discussed below.

Expenditure requirements are also in principle applicable to broadcasters in the 500-channel universe. Whether there are five or 500 Canadian channels, each could be required to spend a certain amount on Canadian programming. And production subsidies could continue to be granted to content producers to assure a supply of such content.

Practical problems arise, however, with the 500-channel scenario. Most fundamentally, with such choice, broadcasters will be competing more

78 This choice is still limited by CRTC authorization and the services selected for carriage by BDUs. There are, in fact, many foreign and unlaunched Canadian television services that may be of interest to Canadian viewers.

vigorously for viewers (and advertising revenues), including with foreign services, and scarcity rents associated with the over-the-air technology will be dissipated. This leaves less room for broadcasters to cross-subsidize less lucrative Canadian programming with rents from more lucrative programming. Moreover, rather than attempting to buy high-quality Canadian programming to attract viewers in a competitive market for viewers, it may be more profitable for competitive channels to comply with Canadian programming requirements by purchasing cheap, low-quality programs that they know few will watch.[79]

At the same time, producers face the difficulty of attracting sufficiently large subsidies to produce high-quality programs. If there are more channels with Canadian quotas, there will need to be a greater number of programs produced, which may spread existing funds too thinly for the production of high-quality shows. Thus, both expenditure quotas and production subsidies lose some of their effectiveness when moving from the over-the-air to the 500-channel technological stage.

For Canadian content, there is an optimistic caveat to this analysis. In the 500-channel world, broadcasters face intense competition and have fewer scarcity rents to divert to Canadian programming. BDUs, on the other hand, potentially earn scarcity rents in this technological stage. There is a downside to this potential market power, as elaborated below in considering access issues, but an upside from a Canadian content perspective is that these undertakings may be well-positioned to fund Canadian programming. If BDUs face limited competition for their offerings, they earn rents that allow them to spend significant resources on Canadian programming without jeopardizing their financial health. Indeed, as a result of CRTC imposed obligations, BDUs are the major private-sector contributors to the Canadian Media Fund.

Public broadcasting continues to be viable, but potentially less effective, in a world of intense competition for viewers across channels. Public broadcasters no longer enjoy scarcity rents that otherwise may help finance their focus on Canadian programming. Moreover, in a world with considerable viewer choice, public broadcasters, along with others, will struggle to attract viewership. Even if the broadcasters successfully produce and exhibit Canadian programming, there is no assurance of an audience.

Canadian ownership restrictions are also workable, but are under some pressure in the 500-channel world. With greater competition among broadcasters, there is less slack available to offset the costs of inefficient capital structures. To the extent that Canadian ownership rules create additional costs, they will be more difficult to absorb than where there are greater scarcity rents. This undermines the capacity of broadcasters to fund their programming, including Canadian programming.

Other potential problems in stage two concern broadcasters' access to the BDU networks. Cable networks and/or satellite providers constitute a BDU oligopoly in many local markets. They could potentially use this power to deny broadcasters access, which has the potential to increase BDU profits. For example, a cable operator who also owns a specialty channel could refuse carriage of a competitor specialty channel to increase profits: since competition dissipates rents, it may be profitable for the cable operators to adopt such a strategy.[80]

This general concern has implications for Canadian content issues by potentially affecting the availability of certain kinds of Canadian programming. Canadian content regulation is therefore consistent with some kind of regulatory oversight of the denial of access to a BDU network. In this sense, regulation of broadcasting parallels regulation of telecommunications, in which access to networks is of paramount importance.

A related issue concerns subscription fees. Historically in Canada, over-the-air broadcasters relied on advertising revenues to fund operations,

79 To be sure, regulation seeks to raise the opportunity cost of shoddy programming by imposing Canadian content requirements alongside prime-time exhibition requirements; that is, the different regulatory obligations work in tandem.

80 Of course, complete vertical integration is not necessary; the cable operator might also deny access to a rival specialty channel in exchange for a share of the rents in a contract with the other rival.

including Canadian content obligations. BDUs did not have to pay these broadcasters for their local signals,[81] but were also compelled to carry their signals. In part because of scarcity, the advertising model has historically been viable.

Over-the-air broadcasters now contend that they cannot depend on advertising alone and should be permitted to charge BDUs a subscription fee for their signal. This "fee-for-carriage" issue relates to Canadian content in that if such fees were payable, over-the-air broadcasters would presumably be better equipped to finance and acquire Canadian productions. On the other hand, such fees would in turn reduce the profits of BDUs (and increase costs to consumers), which would lessen the capacity of BDUs to pay into production subsidy funds.

Stage III: Wired IPTV

The move from over-the-air to networked BDUs is incremental compared to the sea change of the move to IPTV in stage three. Many regulatory instruments will be simply unworkable once broadcasting becomes Internet-based. With IPTV, programs are not "pushed" over the air, or down a BDU network to the viewer. Rather, viewers visit websites or use interactive IPTV program guides to decide on their own which programs to "pull" to themselves over the Internet, and when to do so.

In such a world, Canadian exhibition content quotas lose coherence. First, viewers can potentially watch video distributed from anywhere in the world, not just from Canadian broadcasters or BDUs. There may be intellectual property issues, and geo-blocking as a consequence, but there is no regulatory or technological obstacle to the penetration in Canada of video content from foreign sources.

Second, even if Canadians could view only "Canadian" websites, exhibition quotas do not make much sense in a "pull"-driven model of broadcasting. While television quotas that require broadcasters to show a certain amount of Canadian programming in prime time may achieve the objectives of making the shows available to Canadians, and may better assure viewership given the primacy of these hours for viewers' demand, there is no time-based model to impose quotas on website-broadcasters.

Third, even if there were some attempt to require websites showing videos to provide the option of Canadian programming, regulating such a requirement would be impractical. To what websites would the requirement apply? Who would monitor the hundreds of thousands of websites to ensure compliance? The IPTV model will render exhibition quotas obsolete.

Moreover, and as alluded to above, a "pull"-driven model of content access raises serious questions about the viability of traditional broadcasters. Network broadcasters that have built a brand image and brand loyalty based on the entirety of their programming portfolios will see that loyalty eroded as consumers pick and choose among the popular shows of each network.[82] Further, to the extent that consumers access content over the Internet from the websites of aggregators or content producers, the necessity or desirability of accessing content through a "broadcaster" intermediary is reduced or even eliminated. In a bid to maintain relevance, broadcasters have expanded their on-demand online content offerings and acquired interests in media aggregators (e.g., NBC's interest in Hulu).

Similar predictions apply to Canadian content expenditure requirements. To name just a few hurdles to enforcement, to what websites would such requirements apply? Would a website that showed any video be required to comply? Or predominantly video? By what measure? How would the regulator monitor compliance? It seems clear that quotas and expenditure requirements are doomed to obsolescence in the third IPTV stage of technology.

81 However, BDUs do pay rights-holders for the right to retransmit distant (out-of-market) signals to their subscribers. See Broadcasting Public Notice CRTC 2008-100, "Regulatory frameworks for broadcasting distribution undertakings and discretionary programming services," October 30, 2008.

82 Indeed, viewers are already free to change channels, but networks have been fairly successful in attracting viewers to entire scheduled blocks of programming, giving lift to lesser-known shows by scheduling them adjacent to the most popular "anchor" programs.

Equally obsolete in the IPTV world are Canadian ownership restrictions. Again, Canadians in this stage can access video from anywhere in the world. It is simply impractical to imagine that the CRTC or its equivalent could impose ownership requirements on websites that provide video in Canada.

Production subsidies, on the other hand, remain as viable as ever in an IPTV world. A fund can contribute to productions based on their Canadian-ness, however defined, whether the shows will eventually be broadcast over-the-air, over a BDU network or over the Internet. There will be issues, however, surrounding the burden of paying into such funds. At present BDUs contribute to a fund, and broadcasters have quotas that require them to acquire, and thus implicitly help fund, Canadian programming. In addition, specialty channels have expenditure requirements as a result of their terms of licence. In an IPTV world, however, the BDUs may evolve to online content aggregators, offering the consumer a selection obtained from content providers. As with websites that originate content, aggregator websites may be located in Canada or anywhere worldwide. The same difficulties described above may therefore arise in seeking to obtain contribution to a production fund from such aggregators.

In this third stage, in which the last mile of Internet connections is wired and hence controlled by only one or two providers (cable and/or telephone companies), there may well be scarcity rents associated with distribution that would allow IPTV providers to pay into a production fund. Just as today's BDUs are required to pay levies to promote Canadian programming in part because of scarcity, tomorrow's IPTV providers should be financially capable of such contributions.

On the other hand, simply taxing ISPs for contributions to a production fund is less straightforward than taxing BDUs.[83] A BDU's business is to distribute programming, while an ISP distributes access to the Internet, which obviously involves much more than simply video. Thus ISPs are different from BDUs in that they do not undertake any substantive role in the nature or content of IPTV programming viewed by the user – such as the selection and offering of programming – leaving the nature of internet use, including selection of any audio or video programming, to the user. Even when IPTV is dominant, the problem of whom to tax to finance production subsidies is soluble. ISPs could be taxed, for example, according to the fraction of their traffic that is video-based.[84] Alternatively, a tax could be paid on IPTV providers' revenues, as opposed to simply Internet access revenues.

The tax could be imposed more broadly on Canadians. It is not necessary, and perhaps not preferable, that the production-oriented taxes be targetted at either BDUs or ISPs. Indeed, if the rationale for Canadian content is that it makes Canada a more cohesive, better society, it may be appropriate to tax Canadians generally for the funding of Canadian productions; in theory all benefit from such programming, so all should pay.

Moreover, as competition among ISPs becomes more intense, and there are correspondingly lower rents to tax, it may be that the distortions in consumer prices caused by ISP levies are sufficiently large that taxes are better levied across the population as a whole, not just on ISPs. Producers may prefer an earmarked stream of tax funds for production in that they then avoid regular struggles with other worthy causes in competing for monies from general revenues, but this is not a reason in principle to reject more broad-based taxation to fund production subsidies.

83 Indeed, in the proceeding leading to "Review of broadcasting in new media" (Broadcasting Regulatory Policy CRTC 2009-329, June 4, 2009), a number of parties questioned whether ISPs could properly be regarded as broadcasting undertakings, subject to the *Broadcasting Act*, when they provide access to "broadcasting" through the Internet. The CRTC subsequently referred this jurisdictional question to the Federal Court of Appeal: Broadcasting Order CRTC 2009-452, "Reference to the Federal Court of Appeal – Applicability of the *Broadcasting Act* to Internet service providers," July 28, 2009.

84 Although, as many parties argued in the CRTC's recent new media proceeding, supra, this may not be an appropriate methodology given that a significant portion of online video consists of user-generated content, advertising or other video content that has traditionally not been subject to CRTC regulatory requirements.

The production of content through subsidies can continue in the IPTV stage and making this content available to viewers is potentially straightforward: post the material on a website, and it is accessible. While encouraging Canadians to watch Canadian programming through quotas, including prime-time quotas, is not viable with this technology, the goal of making Canadian content at least available to Canadians is, with one caveat, more easily achieved in an IPTV world than in either the over-the-air or 500-channel technological stages. Once produced, the cost of making Canadian programming available on a website is sufficiently low that content providers could easily establish websites offering their content. Consideration may, however, need to be given to mechanisms to provide prominence to Canadian programming and to help consumers find such programming in the unlimited space of the Internet.

The caveat concerns the owners of the networks that provide Internet services. In a world of net neutrality, content producers will find it straightforward to provide their content to viewers: simply post it on a website. If, however, networks over time introduce systems for monitoring and charging for bandwidth usage by customers, there may be a danger of conflicts of interest on the part of the network owners involving discriminatory access policies. As the technology for monitoring traffic over the network improves, it is possible that networks will exploit potential market power over their physical network by partnering with certain websites, favouring traffic from these sites over traffic from others. For example, if a network also owns a website that streams comedy programming, it may disadvantage traffic from other websites streaming comedy programs.

A network owner may engage in such discriminatory access to exploit its market power in the network and increase its rents. Given that there are only two plausible networks at present for the IPTV world, cable and telephone lines, market power and consequent discrimination is a real possibility in the absence of otherwise regulated net neutrality rules. Canadian shows that lack privileged partnerships with network owners could face obstacles to viewership. This suggests that Canadian content policies may require some consideration of access to networks with market power. In this sense, again, broadcasting converges with the issues addressed by telecommunications regulation.[85]

Canadian public broadcasting remains viable, but potentially weakened, in the IPTV technological stage. Funding becomes more difficult because the public broadcaster will not enjoy scarcity rents that help support operations and with enormous choice, the competition for viewers in the IPTV world will be particularly intense.

Stage IV: Wireless IPTV

In stage four, there is greater competition across broadband networks in providing access to content, including video content, given that the last mile is no longer dominated by (expensive) wired networks. In stage four, as in stage three, quotas, expenditure requirements and ownership restrictions will be futile. Public broadcasting continues to be viable, but potentially diminished as in stage three. Production subsidies also continue to be viable, though their funding may become even less straightforward with the demise of broadcast-focused BDUs and the emergence of the Internet, principally through IPTV, as a distribution vehicle for "broadcast" content. Even if the difficulties identified above with treating ISPs as potential contributors to a production fund are overcome, there is a particularly acute funding issue in stage four. Scarcity rents among ISPs will be dissipated by greater competition among networks, which will leave less slack available for levies to support Canadian programming. Production funds are more likely driven to rely on general government revenues than in previous stages.

85 In Telecom Regulatory Policy CRTC 2009-657, "Review of the Internet traffic management practices of Internet service providers," October 21, 2009, the CRTC recently confirmed that deviations from net neutrality should only arise as a last resort where other traffic management tools (such as pricing incentives) have failed.

Table 5: Effectiveness of Regulatory Instruments to Promote Canadian Content

	Stage I Over-the-air	Stage II 500-channels	Stage III Wired IPTV	Stage IV Wireless IPTV
Exhibition quotas	√	√	X	X
Expenditure quotas	√	√	X	X
Production subsidies	√	√	√	√
Public broadcaster	√	√	√	√
Ownership restrictions	√	√	X	X
Access regulation	N/A	√	√	N/A

Notes: effective (√), ineffective (X).

The key difference for regulation in stage four is that access concerns over network discriminatory policies may be somewhat lessened. If the last mile of Internet access is entirely wireless, this opens the door to greater competition among broadband networks. Of course, spectrum scarcity may exist with respect to last mile services, such that the number of competing wireless providers in a given local market will be limited by the available spectrum. Moreover, last mile wireless networks are not costless to establish. Nevertheless, if market power among networks diminishes, then concerns about discriminatory access designed to increase the rents of the network owner dissipate.

Even in the absence of net neutrality, broadband network owners without market power will not have the same incentives to exclude certain programming as they might in eras with ineffective competition. Thus, even as certain instruments become obsolete, access to Canadian programming could be better assured than in any of the other stages.

Summary

Prior to analyzing optimal policy in relation to changing technologies, it is helpful to consider what constraints technology has imposed and will continue to impose on policymakers. Whatever one thinks of the efficacy of certain policy instruments in principle, some choices will simply not be available going forward. For example, it is reasonable to conclude that owners of for-profit corporations are likely to be motivated by the bottom line, not others' conceptions of patriotic responsibilities, which would render Canadian ownership restrictions of dubious worth in any technological era. But such a debate will ultimately be moot as technology makes such restrictions impractical.

Table 5, above, illustrates the practicality of various instruments to promote Canadian content as technology progresses through the four stages. As developed in the discussion, different instruments may be weaker or stronger depending on the stage, but for simplicity, and to define the degrees of freedom that regulators have in the different stages, we designate instruments as either effective (√), or ineffective (X).

Before considering optimal policy within the practicality constraints set out in this table, it is important to appreciate the limitations of the technological stages. We have described each stage as distinct, which is useful for expositional purposes, but of course unrealistic. At the moment, for example, while cable and satellite providers dominate signal provision, a very small number of Canadians continue to receive their signals over-the-air, and a growing number of viewers watch programs online. Thus, while we are generally in stage two, there are lingering elements of stage one, and with the changeover to all-digital transmission by 2011, emerging elements of stage four.

Even while one technology remains dominant, the emergence of new options will affect the efficacy of old instruments. For example, if Canadian content rules lead to less-preferred Canadian programs dominating prime-time viewing choices (an unlikely scenario, but useful for illustrative purposes), then the transition to stage three will be hastened: viewers seeking their preferred programming are more likely to seek content online. In addition, the presence of alternative technologies is favourable for regulation in that it is likely to limit market power. If an ISP network owner in stage three attempted to hinder access to the broadband network by competing broadcasters, it would face discipline from older technologies: viewers would be more likely to watch video from other ISP networks or even over-the-air offerings.

Furthermore, regulation that may be efficacious in one stage may not be in the next. Hence, if there is a cost to establishing a framework that imposes such regulation late in a stage, it may be sensible not to pursue such a regulatory strategy. For example, there have been extensive debates in recent years about re-establishing minimum expenditure requirements for broadcasters. Given that stage three (IPTV) is not far off in time and such expenditure requirements will then be impractical, it may be better to focus regulatory attention on matters with more lasting implications. We account for these considerations in the policy analysis in the final section.

As a last comment on transitions, to the extent that technological eras overlap, this will affect our analysis of policy efficacy. For example, if "pull" models of broadcasting do not immediately displace "push" models when technology changes, exhibition quotas will not lose coherence overnight; only when "pull" emerges as the dominant model will this be true. (And of course, nobody knows for certain whether "pull" will be the only model in the future, though this is our prediction.)

During the transitions, old policy instruments based on old technology will nevertheless be affected, even if not immediately made obsolete. For example, exhibition quotas lose some, but not all, effectiveness as pull programming emerges. Generally speaking, where there is a gradual transition between technological phases, there is also a gradual diminution of the efficacy of some policy instruments and a corresponding increase in the importance of others.

PART IV
Conclusions and Policy Recommendations

In light of the foregoing discussion, it is clear that new technologies will inevitably make key aspects of current regulatory policies ineffective. As a result, we draw a number of conclusions:

- Fundamental regulatory change is required to reflect the inevitable impact of technological change on consumer viewing behaviour. Canadian content and most likely other regulatory policies as well need to be updated accordingly.
- The current quota-based system relating to time and expenditure allocations will become increasingly ineffective as technological change advances.
- New funding programs and sources of revenue are needed to replace the current quota system to support the creation and promotion of Canadian cultural content.
- Public broadcasting will remain an important potential source of Canadian content despite increased competition for viewers. Regulating Canadian ownership of private broadcasters, in contrast, will become increasingly impractical.
- Broadcast distributors, whether cable, satellite or telephone companies, should be subject to ongoing oversight with respect to access and discrimination issues to prevent any market power abuses, at least in the near term.
- A more comprehensive review of current communications policies needs to be undertaken in the transition period between stages three and four.

Although it is difficult to predict how quickly consumer behaviour will change with the arrival of technological alternatives, it seems reasonable to assume that there will be significant changes within four to five years. The impact will become more obvious as the market share of new technology platforms increases and the legacy

platforms respond to the threat of those alternatives.

It is because technological change requires a fundamental shift in the instruments used to promote Canadian content and voices that the transition period leading to a new policy paradigm is so important. For example, from a policy perspective, it would be appropriate to establish a timeframe within which the current exhibition quota system, as well as any remaining expenditure obligations, would be phased out and replaced by more direct forms of support for Canadian production and content. The quota system should be completely phased out in five years.

Phasing out the quota system does not mean that the degree of public financial support for Canadian content should be diminished. There seems no reason why Canadian society would value the promotion of Canadian content any less because of technological change. The real issue is that the instruments traditionally used to foster and develop that content will be not viable in the converged world.

The answer is to rely more heavily on direct forms of financial support for the Canadian production and content industry. Along with this shift, public broadcasting, including the CBC, should be bolstered with sufficient funding to ensure significant outlets for Canadian content. To ensure that the amount of financial support is adequate, it will be important to assess the value of all current government programs, direct or indirect, used to promote Canadian culture and voices.

The policy implications of technological change also need to be analyzed with respect to broadcast distributors in the converged world. In stage three, for example as noted, there are only two principal competing distribution platforms, the cable companies and the telephone companies.[86] When and if stage four arrives, and to the extent wireless becomes an effective substitute in the last mile, the policy implications for distributors may be very different.

In the meantime, the two principal distributor platforms will both be offering the three main products used in the home, i.e., video, high-speed Internet and telephony. Satellite operators will continue to exist, but may be limited in growth potential as their technology is unidirectional and not effective in large parts of the market such as multiple dwelling units.[87] Moreover, the telephone companies, in many parts of the country, lag behind the cable companies in offering the types of video products consumers will expect in the demand pull world.

In summary, until stage four arrives, there will likely be a limited number of facilities-based providers of broadband. That situation has implications for public policy if the degree of competition among these distributors raises a concern over the exercise of market power.
For these reasons, the CRTC should continue to have jurisdiction over broadcast distributors and ISPs to ensure that they do not behave in an anti-competitive manner and that there is effective regulatory oversight. Issues that may require regulatory intervention include discriminatory practices based on vertical integration or access concerns of content providers.

As technology progresses, content producers will have a wider range of options for getting their programming to viewers. Network access rules should only address residual competitive concerns. The basic access principle is the same one that has historically guided telecommunications policy: parties should have access to networks on commercially reasonable, arm's-length terms that do not reflect the network owner's potential conflicts of interest resulting from a desire to limit competition.

In the third and fourth technological stages, net neutrality would ensure non-discriminatory access to the Internet and hence easy access to viewers by content providers. In the fourth stage, competition among networks may protect content providers from discriminatory access policies even without net neutrality. In other words, network

86 Although each of these is, at least theoretically, available on a wholesale basis to support secondary distributors.

87 Due to line-of-site issues and municipal restrictions on installing receiving dishes on balconies, satellite distribution may not be suitable for many residents of multi-unit dwellings. However, in some cases, broadcasting distribution services are provided by satellite distributors under bulk arrangements.

owners will not have market power to protect through discriminatory policies.

If net neutrality does not exist, and if competition concerns arise, only then might regulation be necessary. Such regulation would ensure that broadcasting content providers are not discriminated against and that access to Canadian content is maintained.

In the 500-channel stage, on the other hand, regulatory oversight of access to cable and satellite networks remains sensible given the networks' potential market power. At present, certain access rules seem inconsistent with the arm's length market outcome that regulation should seek to emulate. As an example of current access policy that should be reconsidered, the "must carry" rules requiring the offering of certain channels by cable and satellite providers should be phased out. These rules effectively give content providers and broadcasters a state-sanctioned right that is tantamount to market power.

Over-the-air broadcasters should be subject to similar regulatory treatment as specialty channels. This would include the right to obtain a fee for the transmission of their signals by distributors such as cable and satellite operators. One of the difficult policy issues will be determining the appropriate process and quantum for any "fee for carriage." The current method of determining fees for specialty channels is not necessarily appropriate for broadcasters, or for that matter, even specialty channels in the long run.

The rules on how fees are determined should be designed to produce a market-like outcome, as opposed to the regulator attempting to set a "fair" fee. The right to obtain a fee for carriage should arise only if the distributor is not obligated to carry the particular channel in question. Various techniques to encourage the parties to settle matters among themselves should also be considered. For example, final offer arbitration, or some other form of discipline, could be adopted during the transition period.

Network access issues like these are standard fare in telecom regulation. The principles in the federal policy directive issued under the *Telecommunications Act* are still appropriate for telecom companies and ISPs. Furthermore, they should also apply to cable and satellite companies. In summary, the policy directive instructs the CRTC to rely on market forces to the maximum extent possible; to use measures that are efficient, proportionate and minimally interfere with market forces; and to regulate in a manner that does not deter efficient entry, is symmetrical and competitively neutral. Since technology will be the driving force of competition in the converged world, there is no reason why similar principles should not be adopted under the *Broadcasting Act*.

Despite the increasing similarity in regulatory principles, there should not be a merger of the *Broadcasting Act* and the *Telecommunications Act*. Although that may occur eventually, it is premature to reach that conclusion at present. Major changes are needed in the approach to broadcast regulation, but it is less clear that changes are needed on the telecommunications side, assuming the policy directive remains in place.

Regardless of whether the communications industry is regulated under one statute or two, the broader question is whether the current regulatory instruments are appropriate in a converged world when many of the current instruments used to promote Canadian content through quotas will become obsolete. Also, during the transition period, policies on Canadian ownership will need to be reassessed, particularly if our recommendation for direct funding for the promotion of Canadian content is adopted, as opposed to using licensing and other regulatory techniques to achieve this objective.

The current legacy governance system has been built over many decades into a complicated labyrinth of policies and regulations. As is so often the case, exiting from regulation is often more difficult than initiating it. While this *Commentary* offers a framework for analyzing Canadian content policy in a world of far-reaching technological change, it does not provide answers to a number of specific regulatory and policy questions.

Because of these complexities, a more comprehensive review of communication public policy is required leading to the adoption of a new paradigm in five years. To undertake this review, the Government of Canada should appoint an independent expert panel, not dissimilar to the Telecommunications Policy Review Panel, to

immediately undertake a comprehensive review of the issues addressed here. It should jointly report to the Minister of Canadian Heritage and the Minister of Industry and be given no more than one year to complete its work.

Its report should be public and subject to debate before the appropriate committees of Parliament. Its terms of reference should be sufficiently broad to include consideration of legislative change, appropriate objectives for any legislation, foreign ownership rules and policy approaches needed to move to a more simplified and market-based regulatory system.

It should also consider the role of public broadcasting and the appropriate means of supporting the promotion and creation of Canadian content.

These are challenging issues. But if governments and industry participants accept the significance of the technological changes described in this *Commentary*, there is no choice but to develop a forward-looking public-policy framework. Now is not the time for a reflexive defence of the status quo, but rather an opportunity to stand back, recognize where technological change is taking us and develop a set of feasible public-policy goals and instruments that will ensure that Canada is positioned at the forefront of the digital economy.

Appendix A Comparison of British and Canadian Point Systems for Film Tax Relief

UK System (inputs and outputs considered)		Canadian System (inputs considered only)	
Factor	**Points**	**Factor**	**Points**
A. Cultural content.			
A1 – Film set in the UK.	4		
A2 – Lead characters British citizens or residents.	4		
A3 – Film based on British subject matter or underlying material.	4		
A4 – Original dialogue recorded mainly in English language.	4		
B. Cultural contribution.			
Film represents/reflects a diverse British culture, heritage or creativity.	4		
C. Cultural hubs.			
C1 – Studio and/or location shooting/ visual effects/special effects.	2		
C2 – Music recording/audio/video post production.	1		
D. Cultural practitioners.			
D1 – Director.	1	Director.	2
D2 – Scriptwriter.	1	Screenwriter.	2
D3 – Producer.	1		
D4 – Composer.	1	Music composer.	1
D5 – Lead actors.	1	Lead performer – highest remuneration.	1
D6 – Majority of cast.	1	Lead performer – second highest remuneration.	1
D7 – Key staff (lead cinematographer / production designer / editor / sound designer / visual effects supervisor / hair and makeup supervisor).	1	Director of photography.	1
D8 – Majority of crew.	1	Art director.	1
		Picture editor.	1
Minimum 16 points required to qualify for tax credit.		Minimum six points required to qualify for tax credit (for a live-action production), of which one of two lead performers, and either the director or screenwriter, must be Canadian.	

Source: http://www.ukfilmcouncil.org.uk/ culturaltestpoints; Canadian Audio-Visual Certification Office.

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