

# **Market Definition Issues for Audio and Audio- Visual Distribution Products and Services in a Digital Environment**

**A Report Prepared for the  
Canadian Radio-television and Telecommunications Commission**

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## **Executive Summary**

New digital media products and services are radically disrupting traditional approaches to the production, distribution, and consumption of audio and audio-visual content. These changes also affect the way in which regulators, such as the CRTC, carry out their responsibilities.

The exercise of defining a relevant market is often an important component of the CRTC's deliberations on an issue, including the CRTC's role in reviewing proposed mergers and acquisitions, the regulation of wholesale markets (although, the CRTC has become much less active in terms of direct regulation in recent years), and, the CRTC's role in promoting the production and availability of Canadian content and the degree to which current policies and regulations work towards that end.

New digital offerings bring a range of new product and distribution characteristics that add further layers of complexity to the market definition exercise. These include alternative means of accessing television programming including video-on-demand and pay-per-view services offered by broadcasting distributors, Internet-based services, as well as broadcasters' own Web sites, and services geared to smart-phones, MP3 players, and tablet computers. In addition to changes in access, other sources of differentiation include: greater control over viewing time; greater variety in duration (e.g., limited time period rentals); increased mobility in service offering (e.g., access outside of home); and alternative payment methods (e.g., pay-per-view). The type of consumer equipment required for access to these services has evolved as well. Also of consideration is access to content. While CRTC prohibitions against certain forms of exclusive arrangements mitigate critical input and vertical integration concerns in the traditional broadcasting sector, these rules do not extend to all new media arrangements.

In addition to the above noted product and regulatory attributes, there are a number of features frequently found in audio and audio-visual product and service markets (e.g., high fixed costs and low marginal costs, "free" pricing, bundling, non-price competition, two-sided markets, vertically integrated production and distribution, and rapid technological change) that further confound the market definition exercise. This additional level of complexity does not mean, however, that established tools and methodologies are outdated. The core objective, and so the core tools, of determining the boundaries of a market – to help identify market power, that is, the ability of a firm or a group of firms to profitably maintain prices above the competitive level for a non-transitory period of time – remain relevant.

The high degree of differentiation that characterizes audio and audio-visual products does mean, however, that defining markets by relying only on end-use and product characteristics is challenging and often inappropriate. As such, a range of empirical tools including natural experiments, diversion ratios, consumer spend allocation, and changes in subscription levels and downloads, plus forward-looking tools including user trends, early adopter evidence, specialist/expert forecasts, and business cases may be useful.

## 1. Introduction

As the Canadian Radio-television and Telecommunications Commission (“the CRTC” or “the Commission”) and many other observers and analysts of the communications sector have noted, recent years have seen tremendous and fast-paced changes in the broadcasting and telecommunications industries. Technologies and devices that most Canadians had not even imagined a generation ago are now commonplace; regulated monopolies have given way to competition; as digitization has advanced, formerly distinct sectors have converged; and business lines have fragmented while firms have consolidated, both vertically and horizontally.

These changes present new challenges for regulators, perhaps especially so in Canada given the country’s unique position in the shadow of the world’s dominant producer of audio and audio-visual products and services and a statutory objective to “safeguard, enrich and strengthen the cultural, political, social and economic fabric of Canada”<sup>1</sup>. A statutory objective which is, today, tied closely to the concept of distinctly Canadian markets for these products and services.

The Commission describes its own role as follows:

“The CRTC’s mandate is to ensure that both the broadcasting and telecommunications systems serve the Canadian public. The CRTC uses the objectives in the *Broadcasting Act* and the *Telecommunications Act* to guide its policy decisions. . . . In broadcasting, the CRTC ensures that all Canadians have access to a wide variety of high-quality Canadian programming as well as access to employment opportunities in the broadcasting system. Programming in the Canadian broadcasting system should reflect Canadian creativity and talent, our bilingual nature, our multicultural diversity and the special place of aboriginal peoples in our society.”<sup>2</sup>

In fulfilling this role, the Commission, among other activities, establishes policies; issues, renews, and amends broadcasting licences; makes decisions on mergers, acquisitions, and changes of ownership in broadcasting; and where required, regulates retail and wholesale markets.

In carrying out these activities, questions of market definition are often important. However, due to the broad extent and the rapid pace of changes that have occurred in the communications sector in recent years, defining markets has become a far less straightforward exercise than was once the case.

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<sup>1</sup> *Broadcasting Act*, s. 3(1)(d)(i).

<sup>2</sup> “About the CRTC”, <http://www.crtc.gc.ca/eng/backgrnd/brochures/b29903.htm>.

Audio and audio-visual products and services are in no way immune from this increased complexity of markets and the challenges the Commission faces in fulfilling its mandate in their regard. This report examines the new complexities that have arisen in defining markets for audio and audio-visual products and services.

The remainder of the report is structured as follows:

- Section 2 provides a high-level overview of the regulatory framework for the Canadian broadcasting sector and addresses the question of why market definition issues are important to the Commission in carrying out its mandate in the new digital environment, particularly in regard to audio and audio-visual products.
- Section 3 provides a brief primer on the practice of market definition, including a discussion of complicating factors in defining markets in regard to audio and audio-visual products.
- Section 4 highlights various products and services that are relevant to the audio and audio-visual market definition discussion.
- Section 5 discusses issues related to content rights markets, vertical integration, and critical inputs.
- Section 6 describes a methodology for determining and applying market definitions.
- Section 7 provides a high-level application of the proposed tools to an example of a new service.
- Section 8 concludes.

## 2. An Overview of the Broadcasting Regulatory Framework

The major components of the (traditional) Canadian broadcasting system are summarized in Table 1.

**Table 1: Major Components of the Traditional Canadian Broadcasting System**

Content Sources	<ul style="list-style-type: none"> <li>• In-house productions by Canadian broadcaster (e.g., <i>The CTV Evening News</i> – CTV; <i>Hockey Night in Canada</i> – CBC; <i>SportsCentre</i> – TSN)</li> <li>• Independent Canadian productions (e.g., <i>Flashpoint</i> – Avamar Entertainment/Pink Sky Entertainment; <i>French Food at Home</i> – Ocean Entertainment)</li> <li>• Foreign productions available from foreign producers, foreign broadcast networks, and distributors (e.g., <i>The Daily Show</i>, <i>Glee</i>, <i>Survivor</i> – US; <i>Coronation Street</i> – UK)</li> </ul>
Broadcasting Licensees	<ul style="list-style-type: none"> <li>• Conventional over-the-air (OTA) national/regional networks (e.g., CBC (English and French), CTV, Canwest-Global, Rogers, TQS, TVA)</li> <li>• Independent local OTA stations (e.g., CHEK in Victoria, BC; CJON in St. John’s, NL)</li> <li>• Specialty services (e.g., the National Geographic Channel, The Sports Network, The Weather Network)</li> <li>• Pay TV services (e.g., The Movie Network, Mpix, Super Écran )</li> <li>• PPV (Pay-Per-View) services (e.g., Shaw Pay-Per-View, Viewer’s Choice)</li> <li>• VOD (Video-on-Demand) services (e.g., Rogers Video-on-Demand, TELUS Video-on-Demand)</li> </ul> <hr style="border-top: 1px dashed black;"/> <ul style="list-style-type: none"> <li>• AM radio broadcasters</li> <li>• FM radio broadcasters</li> <li>• Pay audio (e.g., Galaxie)</li> <li>• Satellite radio (e.g., Sirius/XM)</li> </ul>
Broadcasting Distribution Undertakings	<ul style="list-style-type: none"> <li>• Cable (e.g., Eastlink, Vidéotron, Cogeco, Rogers, Shaw)</li> <li>• DSL (Digital Subscriber Line) (e.g., Bell Television, SaskTel Max TV, TELUS TV)</li> <li>• DTH (Direct-to-Home Satellite) (e.g., Bell ExpressVu, Shaw Direct )</li> <li>• MDS (Multipoint Distribution Service) (e.g., Craig Wireless, Câblevision TRP-SDM)</li> </ul>

The Commission regulates the amount of Canadian content that licensed radio and television broadcasters must provide (including within specific time periods for some broadcasters). Some broadcasters also face requirements and/or incentives to deliver particular types of programming, e.g., dramas. As well, the Commission imposes requirements for expenditures and contributions related to the production of Canadian content, and limits the amount of programming that broadcasters can source from themselves or from related companies.

When considering licence applications for new pay and specialty services, the Commission employs a competitiveness test and may deny applications from new

(particularly non-Canadian) services where there would be a significant overlap with any existing Canadian service.

Broadcasting distributors<sup>3</sup> are required to offer a “basic” service, to which customers must subscribe before receiving any specialty services. They also are required to carry certain television stations (e.g., CBC English and French, other local stations, APTN, CPAC) on this basic package. As well, the distributors must carry certain (“Category A services”) pay and specialty services (either in standard definition (SD) or high definition (HD) format), and equally those services are required to provide their signals to the broadcasting distributors, whereas other pay and speciality services (“Category B services”) are optional. The Commission also imposes requirements for a minimum number of minority-language services and a maximum ratio of related (affiliated) to unrelated services. Distributors must ensure that each subscriber receives a majority of Canadian services; that is, a customer who subscribes to N non-Canadian services must also subscribe to at least N+1 Canadian services. Broadcasting distributors must contribute a portion of their gross revenues to independent production funds for the development of Canadian programming. Furthermore, distributors are prohibited from providing themselves with an undue preference and from subjecting competitors to an undue disadvantage; for example, a broadcasting distributor may not deny an affiliated specialty service to another broadcasting distributor who wishes to carry it.

Many Canadian broadcasters carry a significant amount of American programming, often at the same time as an American network. To maximize the advertising value of the Canadian broadcasting rights to such programming and thereby, it is hoped, maximize the dollars that are available for the production of Canadian programming, the Commission requires broadcasting distributors to substitute the Canadian signal for the American signal when the same program is being aired on both stations so that viewers will see only the advertising carried by the Canadian broadcaster.

## **2.1 The Commission’s Interest in Market Definition**

Given its regulatory mandate, the Commission may be interested in market definition questions for a number of reasons.

Defining markets as part of a competition assessment is important to the Commission in reviewing proposed mergers and acquisitions. Determining competitiveness also is an important matter for consideration in the regulation of wholesale and retail markets, but it is important to recognize that the Commission has become much less active in terms of direct regulation in recent years.

Given the Commission’s role in promoting the production and availability of Canadian content and the degree to which current policies and regulations work towards that end – (e.g., simultaneous substitution, genre protection, expenditure/contribution requirements),

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<sup>3</sup> For technical reasons, the precise requirements may differ between terrestrial (cable, DSL, MDS) systems and DTH satellite-based systems.



regulation depends upon distinct Canadian markets for rights and advertising for their effectiveness. As such, market definition becomes important in assessing and designing measures in support of cultural objectives. For example, a Canadian broadcaster may be required to commit to certain expenditures and/or contributions related to the production of Canadian content. As part of the regulatory bargain, the broadcaster may be afforded some degree of protection from competition in CRTC licensing decisions and also may have the value of its advertising enhanced by the requirement for simultaneous substitution of American signals. The integrity of this framework may be compromised, however, if consumers are willing and able to access the same content from other sources that are not subject to the Commission's regulatory reach. Thus the exercise of market definition, i.e., determining substitutability among products and services, becomes important in assessing the impact of new media offerings on the integrity of such frameworks.

### 3. A Primer on Market Definition: A Summary

Market definition entails delineating the boundaries of a market, whereby all the products/geographic locations within the market are considered to have a price-constraining effect on each other.<sup>4</sup> The objective of determining the boundaries of a market is to help identify market power; that is, the ability of a firm or a group of firms to profitably maintain prices above the competitive level for a non-transitory period of time. Markets are typically defined in the antitrust context, perhaps most often when ascertaining whether a merger is likely to result in a lessening of competition. It is, however, a sufficiently general concept that it is applicable to most situations where one seeks to determine the degree of substitutability across a set of products.

Markets are defined in two dimensions: product and geographic. There is also a time dimension in that markets are typically defined on the basis of prevailing prices. That is, it answers the question, “Which products/geographic locations currently constrain each other?” However, it is a sufficiently flexible concept that one could also posit the degree of substitutability at different, lower or higher, prices. This may be of interest, for example, when prevailing prices are expected to decline shortly due to a change in the price of the technology on which the products rely.

The remainder of this section briefly discusses the main conceptual approach for delineating markets – the hypothetical monopolist test. This test in the context of product differentiation is also discussed, including the empirical tools that may be appropriate in the context of highly differentiated products. Other product and market characteristics that are often found in the audio and audio-visual sectors that typically require consideration in defining markets are also noted. All of these topics are discussed in more detail in the Appendix.

#### 3.1 The Hypothetical Monopolist Test

The conceptual approach for delineating a market is typically the hypothetical monopolist test (“HMT”).<sup>5</sup> That is, a relevant market is defined as the smallest group of products and the smallest geographic areas in which a hypothetical monopolist would impose and sustain a small but significant and non-transitory increase in price (“SSNIP”) above current levels (or any other level appropriate for the analysis). For example, if a firm were able to control all OTA broadcasts and was able to profitably impose a 5% price increase in the cost of advertising on OTA broadcasts, this would suggest that OTA broadcasting is a relevant market in the sale of advertising. If this were not the case because, for example, advertisers would switch in sufficient numbers to advertising on

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<sup>4</sup> While price is referred to, firms may also impact each other’s choice of product quality, variety, associated services and so forth. Following a common convention, price should generally be understood to include other dimensions of competition that may be valued by consumers. For example, a relevant market may be thought of as one where all the products within it constrain each other’s quality-adjusted prices.

<sup>5</sup> The information in this paragraph is largely based on information contained in the *Merger Enforcement Guidelines*, Competition Bureau, September 2004, at 3.5.

specialty services so as to undermine the profitability of the 5% price increase, OTA broadcasting would not be considered a relevant market. The question would then have to be posed again, this time considering a firm that hypothetically controls all OTA broadcasts plus some portion of specialty services. This process continues until a set of products (and geographic locations) over which a hypothetical monopolist would be able to profitably impose a SSNIP is arrived at. This would then be considered the relevant market.

The HMT is, as noted, a conceptual approach. It is often not operationalized.<sup>6</sup> Rather, a number of factors may inform market definition such as buyer behaviour, buyer views, functional interchangeability, and buyer switching costs. The HMT, however, can and should guide the use to which such factors are put. For example, if only some buyers face switching costs, what is relevant is whether the quantity of switches by buyers who do not face such switching costs to alternative suppliers is sufficient to discipline a price increase.

### **3.2 Product Differentiation**

Defining markets accurately can be particularly challenging when products are differentiated. The question of where to draw the boundary between products (and locations if geographic location is an important source of differentiation) is often not clear when there are many brands of a product with relatively minor differences. For example, one audio-visual service may have high picture quality but relatively limited variety in content, versus another service with lower picture quality but a great deal of content variety. In some cases, the distinction between a highly concentrated market, and one characterized by lots of market participants can depend on ‘close calls’ in market definition. This challenge results because market definition decisions are binary, while competitive effects ones are ‘smooth’.

As a result of this differentiation, there has been movement in merger analysis towards estimating the potential price effects of a merger directly through the reliance on a range of possible empirical exercises. Empirical tools that may be available include diversion ratios, natural experiments, cross-sectional analysis, and price correlations.<sup>7</sup>

### **3.3 Complicating Factors in Defining Markets for Audio and Audio-Visual Products**

There are a number of factors in addition to product differentiation that can complicate market definition in the case of audio and audio-visual products. None, however, undermine the conceptual approach of the HMT, but all must be considered in the market definition exercise and some, rapid technological change in particular, have implications in regard to the reliability of the use of historical information in defining markets.

These complicating factors include:

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<sup>6</sup> Methods by which HMT may be operationalized are discussed in the Appendix.

<sup>7</sup> These are discussed in greater detail in the Appendix.

- Price discrimination: When the ability of a supplier to price discriminate is as a result of different competitive options available to different buyers, perhaps because of buyers' differing geographic locations or differing available technologies, relevant markets should be defined with reference to these differing classes of buyers, including differing buyer locations.
- Large fixed costs and low marginal costs: Marginal cost pricing is often not sustainable in audio and audio-visual markets because high fixed costs of production would not be recovered. As such, competitive markets with a variety of substitutes could be characterized by relatively high price-cost margins.
- Bundles, "free" content, and other pricing methods: Audio and audio-visual products tend to be sold through a range of pricing mechanisms, including the use of bundles, the availability of "free" content (e.g., OTA radio and television broadcasting), and a range of payment methods (e.g., pay-per-view, subscription, etc.).
  - Bundles: Bundling can be a means of price discriminating.
  - Free content: Free content can complicate market definition when trying to determine the price-constraining effects of free programming on paid programming. The relevant question is whether a hypothetical monopolist over the paid programming would be able to profitably raise its price by a SSNIP. When considering constraints on free programming, the relevant question is whether such broadcasters could restrict some non-price dimension of competition such as quality or variety of programming.
  - Other pricing methods: an observation of differences in payment methods is insufficient to conclude that two different products are in different relevant markets.
- Non-price competition: Non-price sources of differentiation, e.g., variety and quality of programming, are important means of competition.
- Two-sided markets: These are markets where broadcasters provide services to consumers and advertisers. Broadcasters' ability to sell advertising depends on their ability to attract viewers or listeners. This interrelationship impacts pricing on both "sides" of the two-sided market. In particular, broadcasters may choose to lower the price of their services to consumers (potentially all the way down to zero) not just due to the degree of competition between broadcasters for viewers/listeners but also due to the effect of the price decrease on viewership/listenership and so the appeal of the service to advertisers.

- Stages of product, vertical integration and critical inputs: Markets are properly defined at the level of the supply chain that is of interest, e.g., content production as distinct from content distribution. Identifying competitors and the degree of competition at a particular stage of production can be complicated by the fact that some suppliers may be vertically integrated into various stages, while others are not, and others still are vertically integrated into different stages. Whether the vertically integrated firms offer the various services they produce to competitors may also be relevant.
- Availability and price of platforms used to deliver services: If a certain platform is necessary for the provision of audio and audio-visual programming to consumers (e.g., broadband Internet), and it is not available in certain geographic areas, or its provision is technologically unreliable, or it is very costly, this can impact the downstream substitutes (and so the relevant market) available to consumers located within that geographic market.
- Rapidly evolving technology: Markets characterized by rapidly evolving technology pose challenges in defining markets in that defined markets may quickly become outdated, particularly if a market is on the verge of a ‘tipping point’ wherein consumers switch to new technologies in large numbers rendering the old technology obsolete (e.g., the switch from VCRs to DVD players).

## **4. Relevant New Products and Services and Their Key Attributes**

The traditional means of accessing broadcasting content are familiar to all Canadians:

- Radio programming can be received, for free, via AM/FM radios by listeners within sufficient proximity of the transmitting stations. Since listeners pay nothing for the service, broadcasters are entirely dependent upon advertising for their revenues.
- Similarly, over-the-air television programming can be accessed, for free, by consumers within the footprint of the television transmitter. As with radio, since viewers pay nothing for the service, broadcasters are entirely dependent upon advertising for their revenues.
- Alternatively, consumers can become subscribers, for a monthly fee, with a broadcasting distributor and receive access to a basic set of television channels, with the option to add additional channels (or channel packages).

The original broadcasting distributors utilized coaxial cable networks, but this group now also includes operators using DTH satellites, MDS terrestrial wireless networks, and the DSL infrastructure of companies who formerly were (only) telecommunications service providers.

In these models, consumers are constrained to accessing content according to the programming schedules of the broadcasters.<sup>8</sup> As well, subscribers of broadcasting distributors are tied to the location of their cable/DSL connections or their satellite/MDS antennas. (Except for those who own very small, portable television sets, consumers of over-the-air television programming also are constrained to viewing programming at the location of their televisions.)

### **4.1 New Products and Services**

There now are myriad alternative means of accessing television programming including video-on-demand and pay-per-view services offered by broadcasting distributors, Internet-based services like Apple TV/iTunes, Hulu, Joost, Jump TV, Netflix, Tou.tv, and YouTube, as well as broadcasters' own Web sites, and services geared to smart-phones, MP3 players, and tablet computers.

In the audio realm, traditional radio now has been joined by Internet-based radio stations, satellite radio, and services like iTunes and Pandora.

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<sup>8</sup> However, this constraint is becoming relaxed as the adoption rate for digital video recorders (DVRs) – also known as personal video recorders (PVRs) – rises.

It also must be noted that audio and audio-visual products can be accessed illegally and that the availability of pirated content may act as a competitive constraint on legitimate services. We do not, however, consider illegally accessed content further herein. The legal issue surrounding pirated material is largely one of copyright protection, which is outside the jurisdiction of the CRTC.

The attributes of these new products and services are discussed below. (Note that some may not be relevant for audio products and may pertain only to audio-visual products.) Following the discussion of the various attributes, a number of these new products and services are summarized and compared in Table 2.

## 4.2 Content

New forms of digital content can be differentiated over a number of attributes.

- **Programming variety.** Some services may focus on movies and television dramas and comedies, while others are geared towards, say, sporting events. Similarly, some services will focus on typical North American content, while others will cater to appetites for international and ethnic fare. Services also will be differentiated by the volume of the catalogues that they can offer.
- **Quality.** In addition to the general sound and picture quality of the viewing/listening experience, this dimension includes distinctions such as standard-definition versus high-definition versus (in time, presumably) 3D.
- **Presence (or not) of advertisements.** Some consumers may place a premium on being able to watch or listen to content without any interruptions from advertisements.
- **Timeliness.** Some consumers may be largely indifferent between watching a drama or comedy program during its original broadcast time and waiting an extra day or two to see it. Conversely, some types of programming, e.g., news and sports, have a very limited shelf life.
- **Duration.** Is the programming available during a single time period, as with a pay-per-view event? Can it be rented for viewing at the consumer's leisure, and if so, for how long? Can it be purchased outright, as with the sale of a DVD?

## 4.3 Access

In contrast to the “dumb” television receivers of years past, digital video recorders and on-demand and pay-per-view services now provide consumers with much greater choice and flexibility. As well, there now are both alternative devices for accessing broadcasting content – television shows can now be viewed on desktop and laptop computers, tablets, smart-phones, etc. – and new ways to bring content to the television set itself, such as new Internet-ready televisions and Apple TV.

As most of the new alternative services are Web-based, users with a laptop computer – or in some case other devices such as iPhones, iPads, Blackberries, and other smart-phones and tablets – can use these services in a mobile manner. (Rogers also allows its cable subscribers to access services over the Internet, meaning that customers can access this programming outside their homes.) Live-streaming services require that the user be connected to the Internet, but services that allow for content to be downloaded permit the user to enjoy it anywhere. Despite this technical mobility, options for consumers in Canada remain limited as compared to the United States. Hulu and Pandora, for example, do not offer service (yet?) to Canadians, and the content library available on the Canadian versions of iTunes and Netflix, for example, is smaller than what is available to customers in the United States.

Within the domain of access, there are two key attributes that differentiate new digital products and services.

- **Mobility.** Can the programming be accessed outside the home? Is a live Internet connection required? Can the programming be enjoyed while moving (in a car or on a bus or train, for example)?
- **Consumer equipment.** Does the consumer require a specific type of television or a separate set top box? Is the service tied to, for example, a particular type/brand of smart-phone or MP3 player?

#### 4.4 Payment

Some services, e.g., Tou.tv and Hulu, are free to consumers and thus entirely dependent upon advertising for their revenues. Other services restrict their content to subscribers who pay a monthly fee; JumpTV, Netflix, and XM/Sirius Radio fall into this category, as do video-on-demand services offered by broadcast distributors. The third category comprises service providers who provide content on a pay-per-view/download basis, such as Apple TV and iTunes, and, as the name implies, pay-per-view services offered by broadcast distributors.

The main differentiators within the payment domain are:

- **Price.** Services may vary in terms of their pricing format – e.g., flat monthly fee, rental/purchase fee per download – as well as in terms of the quantum of price that is charged (and in some cases content is provided to consumers for free).
- **Bundling.** To access a specific service, must the consumer also subscribe to (and pay for) other services that may not be of interest and value to him or her? For example, a consumer who enjoys cooking shows may be forced to purchase a “life-style” bundle including channels devoted to fashion, home improvement, health and fitness, etc., just to have access to The Food Network.



## 4.5 Summary Chart

**Table 2: Key Attributes of a Sample of New Digital Services**

Name of product/service	Content	Access	Payment
Apple TV	The Apple TV box device is connected to the television. Customers can then rent movies and TV show episodes from Apple, as well as connect directly to other services such as Netflix and YouTube.	The Apple TV box requires a connection to the television and to the Internet. The box also can communicate wirelessly with a Mac or an iPod.  The Apple TV service is available in Canada and customers can order movies. However – and somewhat ironically given the name of the service – at this time Canadian customers cannot obtain TV episodes through Apple TV.	The Apple TV box costs \$119 in Canada. Movies (\$4 to \$6) and television episodes (\$1) then can be rented. Once rented, the user has 30 days to start viewing, and once viewing has begun, 24 hours to complete viewing the movie or episode.
Hulu	TV shows and movies can be streamed from the Hulu Web site	Web site; smart-phones  Not available in Canada	Free
iTunes	Movies, TV shows, podcasts, and music can be downloaded (generally for a fee) from the iTunes site.	Web site; installation of (free) iTunes software is required.  Movie/TV catalogue is limited as compared to the US version of the iTunes store.	Pay-per-download; both purchase and rental options available.
JumpTV	North American sports (college, minor league hockey; international sports, television, and movies)	Web site	Monthly subscription
Netflix	Movies and TV shows	Web site; Netflix-enabled TV; TV via Wii, Xbox, PlayStation; iPad/iPhone  Movie/TV catalogue is limited as compared to the US version	Monthly subscription
Pandora	Music combined with recommendation service based on the user's inputs for likes and dislikes	Web site, smart-phone  Not available in Canada	There is a free service that contains advertisements and a subscription service without advertisements
Pay-per-view	Movies, sports, events available to subscribers of cable/DTH/DSL systems	Via cable/satellite/DSL systems	Pay-per-view
Tou.tv	Episodes of French-language television shows	Web site	Free
Video-on-demand	Movies, sports, events available to subscribers of cable systems	Via cable system, or in some cases, also via the Web	Monthly subscription
XM/Sirius	Commercial-free radio across a range of genres	Satellite radio receiver (car or home), or via Web site	Monthly subscription
YouTube	Unlicensed content (clips) uploaded by users	Web site	Free

## 5. Rights Markets

The producer of a television program arranges the financing of the production; contracts for the services of the actors, directors, camera operators, technicians, etc.; and exercises financial and creative control over the program. The producer holds the copyright for the program and negotiates distribution rights with broadcasters.

In some cases the production is done “in house”, i.e., the broadcaster *is* the producer and therefore no negotiations need take place between producer and broadcaster. News programming is a typical example of this type of arrangement.

When broadcasters acquire programming rights from independent producers, two broad approaches are typical. In one case, the broadcaster is an up-front collaborator and investor and shares in the risks associated with getting the project off the ground and completed. In the second case, the broadcaster acquires the programming rights after production has been completed (from the producer, or in a sub-licensing agreement from a distributor or another broadcaster who acquired the primary rights); here the broadcaster typically is in a weaker bargaining position as it has not borne any of the risks of production.

Producers will subdivide the rights to their programs by territory, language, platform, and viewing “window”. As Miller notes, “In their principle [*sic*] domestic market, producers will typically pre-license rights directly to a commissioning broadcaster for a defined initial period of time and/or a number of runs specific to their platform(s). Producers will then further license program rights (often through distributors) to a succession of other broadcasters in defined markets, languages, platforms, and periods of time and/or number of runs.”<sup>9</sup>

In addition to rights for each of conventional broadcasting, pay television, and specialty television, producers also offer separate rights for video-on-demand broadcasting, Internet distribution, and mobile distribution (cellular/wireless broadband).

English-language broadcasting rights for Canada generally are awarded on a national basis, given that there remain only a small number of independent local/regional broadcasters.

As most Canadians have access to the signals of American broadcasters, the (advertising) value of the Canadian broadcasting rights to programming originating from the US are subject to erosion when the a program is played simultaneously on, say, CTV and NBC. The value of the Canadian rights is protected by a CRTC requirement that in such situations, broadcast distributors replace the American signal with the Canadian one.

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<sup>9</sup> “An Overview of the Canadian Program Rights Market,” Peter Miller, report prepared for the CRTC, July 2007, p. 4.

Similarly, the value of Canadian Internet distribution rights is at risk if Canadians can access the same content on a US-based Web site. The most commonly applied solution to this problem is geo-blocking, in which access to a site, or to certain content on a site, is restricted to users whose IP addresses come from the same country. It is possible to “spoof” an IP address, however, and get around these restrictions.

To date, the broadcasting rights and the ancillary rights (VOD, Internet, mobile, etc.) to the same programming generally have been sold together; for example, the same Canadian broadcaster will acquire both the Canadian broadcasting and the Canadian ancillary rights to an American program. However, there is no guarantee that this model will hold into the future.

While CRTC prohibitions against certain forms of exclusive arrangements mitigate critical input and vertical integration concerns in the traditional broadcasting sector, these rules do not extend to all new media arrangements. For example, during the 2010 FIFA World Cup, Rogers had the exclusive Canadian rights to provide coverage via mobile phones. (This example is not meant to imply any judgement or conclusion as to whether or not the Rogers-FIFA arrangement should have been a concern for regulators.)

## **6. Methodology for Determining Market Definition**

Given that the audio and audio-visual media markets are characterized by highly differentiated products, which often renders market definition through the use of indirect tools such as end-use and product characteristics challenging, empirical tools that focus on consumer and/or price responses to new product introductions or relative changes in product prices may be necessary to ascertain whether particular products are good substitutes.

This is not to say that an inventory of product characteristics should not be determined, as it is possible that a particular characteristic may trump all other issues of market definition. This is particularly likely the case if a service requires a technology that is simply not available, be it in a particular region or more widely, if it is only available at a prohibitively high price, or if its supply is unreliable. Moreover, an intimate knowledge of product characteristics in conjunction with empirical work to determine consumer preferences may reveal that there are certain product characteristics that are key to gaining consumers. For example, absent access to NHL games a Canadian sports broadcasting service may not be competitively effective.

That said, knowing that one product has commercials but excellent video quality and another product does not have commercials but has poor picture quality is unlikely to be indicative of whether sufficient consumers would switch from one to the other so as to render a price increase by one unprofitable. Given the large number of product characteristics and their possible combinations, in conjunction with consumer heterogeneity, a case-by-case analysis is typically required. This is particularly the case if the matter at issue is a merger and so the question ultimately of interest is whether the combination of two particular entities selling different products or brands will result in a price rise. In such a situation, it is often hard to bypass the need for quantitative tools.

To further complicate matters, as noted above, market definition is not free of the vagaries of time. This is particularly true in the audio and audio-visual context where there are regularly new product introductions, and the prices of such new products and consumers' willingness to adopt new products and associated technologies are rapidly evolving. Markets that are determined for the most part on the basis of historical information, no matter how recent, are more likely to become quickly outmoded. As such, in determining market definition in audio and audio-visual markets, there is a particular need to pay attention to information that may speak to the future.

Product dimensions that may impact consumer preferences and so market definition are discussed below in section 6.1, empirical tools for consideration given audio and audio-visual product heterogeneity are discussed in section 6.2, and quantitative and qualitative tools that may also allow for a forward-looking dimension are examined in section 6.3.

## 6.1 Product Dimensions

As noted, product characteristics – given the highly differentiated nature of audio and audio-visual services and the associated heterogeneity of consumer demand – are unlikely to be determinative of market definition. One possible exception is the technology required for access or use of a service. It is also possible that a particular product dimension is so important to consumers that absent access to it, a service is unlikely to be competitively effective and so have little price-constraining impact no matter how low its price or how appealing its other product characteristics.

### *Technology*

It is now possible to watch a particular live television program on a television set in one's home, but also on a desktop computer in the home, or on a laptop computer or a smart-phone in any location with an appropriate Internet connection. Because of its small size, the smart-phone is the only one of these technologies that truly allows the consumer to access the content almost anywhere; it simply is impractical to view programming on, say, a laptop computer while walking down the street or while riding on a crowded bus. Thus the size, convenience, and ubiquity of smart-phone technology may lead to a conclusion that smart-phone broadcasting constitutes its own market.

### *Other Product Dimensions*

It is difficult to tell *a priori* which, if any, product dimension may prove critical to competitive effectiveness or viability. Should there be such a dimension, service producers will, of course, be focused on including it in their service. As such, these potentially critical product attributes are likely to become an issue in cases where a particular service is denied access to such an attribute. More generally, a service that fails to have a particular attribute may render it competitively ineffective against services that do have such an attribute, placing it in a separate product market.

Possible important dimensions of audio and audio-visual products that may play a role in consumer preference include content attributes (programming variety, quality, presence of advertisements, timeliness, duration), access attributes (mobility, requirement for specialized consumer equipment), and payment attributes (pricing, bundling). (Refer to sections 4.2 through 4.4 for a more detailed description of these attributes.)

## 6.2 Empirical Tools

As is made clear in the above discussion of audio and audio-visual product characteristics, these products are highly differentiated. Absent a product dimension that is determinative to market definition, it is often the case that determining product substitutability reliably requires consideration of empirical tools. Such possible tools in the context of audio and audio-visual products are discussed below.

### **6.2.1 Natural Experiments**

While, as considered in more detail below, the rapidly evolving nature of audio and audio-visual services renders determination of market definition with any longevity a challenge, the regular introduction of new services does allow for the possibility of carrying out ‘natural experiment’ empirical exercises. The incidence of a change in structure due to entry allows for an estimate of the price effect of such entry. In particular, if market prices or the price of a particular potential substitute (the dependent variable) declines with entry, this suggests that the entrant’s product is a substitute. Simply charting real prices before and after entry can be telling in this regard. However, prices will change in response to factors in addition to competition, such as cost increases or shifts in demand, so if data are available, there is advantage in controlling for other potential explanatory variables in a multivariate regression.

Data requirements for such analysis typically include the price of the product of interest (the dependent variable); some measure of associated quantity, which will depend on the product in question, but could be subscription levels or number of paid downloads; the date of entry of the potential competing product; and some measure of costs or a price index reflective of major cost components. Other potential variables of interest may include dummy variables for such items as an index for the quality of technology by geographic region, seasonality, and some measure of the existing level of competition (again potentially by geographic region).

In the case of free products, the impact of the entry of a free product on an existing product can be assessed in the same way as described above. If the question of interest is the effect of entry on a free product, alternative dependent variables are amount of advertising revenue or number of viewing hours.

### **6.2.2 Diversion Ratios**

As discussed above, a diversion ratio is the percentage of total lost sales that are lost to a particular entity (or group of entities if that is more appropriate) should the price of one entity’s product increase by a small amount. For example, if a cable television system operator were to increase the price of a cable package by a small amount and half of the subscribers it lost went to satellite television and a third went to DSL, the diversion ratio between cable and satellite television would be 50% and the diversion ratio between cable television and DSL would be 33%.

There is a range of possible sources of information for the estimation of diversion ratios. For example, own- and cross-price elasticities of demand can be estimated from which particular diversion ratios may be determined (such estimates typically require a considerable amount of price and quantity data). Other sources of information that may be suggestive of diversion ratios include such items as a company’s win-loss reports, wherein a company may track to which entity it has lost a subscriber and why. In the context of sales to advertisers, also informative may be the service or type of service to

which advertisers turn when a particular service's advertising space is sold out. Consumer surveys also may be carried out to obtain information relevant to diversion.

### **6.2.3 Consumer Spend Allocation**

For two products to be price-constraining substitutes, not only is it not required that all consumers switch from one service to the other, it is also not necessary for a particular consumer to switch all her broadcast consumption from one service to another. It may be the case that a consumer will continue to allocate some of her consumption to traditional services but not as much as before a particular new service was available. For example, the consumer may purchase fewer pay-per-view movies in favour of Internet-based television, or she may reduce the size of the cable-television package to which she subscribes. As such, information on relative shifts in allocation of consumer spend across such services may be informative.

### **6.2.4 Changes in Subscription Levels and Downloads**

As noted above in the context of natural experiments, estimates of the effect of entry on such items as viewing hours and advertiser revenue can also speak to market definition. Other dependent variables potentially of interest include subscription levels and number of downloads. Should the effect of entry on these variables be both economically and statistically significant, the more likely it is that the services at issue are in the same market. Short of a multivariate regression, data on changes in the number of households subscribing to a particular service – new or traditional – relative to the number of households with access to the technology necessary for use of particular service can be informative. This is similarly the case in regard to trends in the number of downloads.

## **6.3 Forward-Looking Tools**

In addition to the empirical tools discussed above, there are also a number of quantitative and qualitative sources of information that may not only assist in the analysis of market dimensions but also provide it with a forward-looking element. This can be particularly important in the context of the rapidly evolving markets for audio and audio-visual services.

### **6.3.1 User Trends**

Steady increases or sudden, even if slight, upward ticks in consumers' use – typically measured in terms of minutes of use per week – of a potentially new competing service may be telling. This is particularly the case if such a trend is at the expense of traditional services. If it is not at the expense of traditional services, it is possible that the existence of the new service is merely expanding consumers' demand for media/entertainment services by, for example, filling a niche that was not previously accounted for. For example, the new service may be at a price point that is cheaper than the traditional service (e.g., Internet-based subscription television versus cable or satellite-based television) and so accessing a segment of the population that had otherwise not

subscribed or watched television. Alternatively, if that segment of consumers had previously only viewed OTA television, the Internet-based television may be in the same relevant market as OTA television but not other traditional television broadcasters. In such a situation, the viewing levels of other traditional broadcasters are more likely to be constant, while there was a decline in OTA television viewing that coincided with increased viewing of Internet-based television.

It is also possible that a new product will both increase overall demand for media/entertainment and encroach on the demand for traditional services, particularly given that there are upper bounds on total possible time (and budget) spent on media/entertainment. As such, when examining trends and overall usership, how close consumers are to likely upper bounds is a relevant consideration. The closer consumers are to upper bounds, the more likely that evidence of upwards trends will eventually come at the expense of time allotted to traditional services. Also relevant are any data on dual- or multiple-usage; that is, consumers who watch more than one service. An increase in such users may also suggest an increase in the overall market size rather than substitution away from traditional to new services. If two particular services are of consideration, the extent to which users of a traditional service continue to use that service while adopting the new service can be telling.

It may be the case that the consumer will continue to allocate some of her consumption to traditional services but not as much as before a particular new service was available. Early trends in viewing/listening time allocation – so a continued purchase of a particular cable-television package but fewer hours per week spent viewing the associated programming – may be an early harbinger of later allocation of media spend.

In observing trends, consideration must also be given to the possibility that an uptick is transitory. Items to consider here include whether the new service is going through a period of heavy promotion. For example, use may be up because the new service is free or subject to some other price or product concession over the first few months of its availability. In such a situation, consumer usage of the new service during the promotional period is typically not as telling as usage levels following the promotion. While a downturn is to be expected at the end of a promotion period, the steepness and duration of decline may be of importance. Alternatively, if the length of the promotional period is not set – for example, every new user of the media is eligible for a free trial period regardless of when he first subscribed to the service – analysis of information on subscription renewal levels following the promotion may be more telling (use of subscription information is discussed in more detail below).

### ***Data Particular to Media/Entertainment Usage Trends***

In the context of new digital services, consumer allocation of leisure time in general and leisure time allocated to entertainment/media consumption in particular are relevant, as are absolute levels of consumption of various media. The data on total leisure time will likely provide a good sense of the upper bound on time available for entertainment/media consumption. Total leisure time allocation need not be specific to digital services, but, if



possible, allocation of entertainment/media should be delineated by particular digital services, e.g., Jump TV, as opposed to broad categories based on distribution method, e.g., Internet-based television. If the former level of delineation is not available, delineation by the narrowest subcategory should be sought, e.g., Internet-based subscription television versus Internet-based free television.

If data are available, mode of consumption, e.g., through a handheld device, a computer, etc., may also be relevant. Time series data on information such as broadband penetration and smart-phone use may also speak to likely longer term trends.

The exact points in time various new digital media became available would then be determined and considered against the above backdrop of consumers usage trends.

As noted above consideration should also be given to any free trial periods or any other price/product concession offered by new digital services. Relevant features could include the length of the concession and eligibility of consumers, including the period over which consumers remain eligible. Even absent price concession, heavy promotion periods may have associated upticks in usage. When considering trends, such periods should also be laid over the data.

### **6.3.2 Evidence of “Early Adopters”**

Clearly, the longer period available to observe trends post the introduction of a new service the better. Absent a longer period over which to observe trends or in addition to such a period, information on usage by groups that are traditionally viewed as early adopters may be relevant. For example, if a more affluent socio-demographic group is viewed as early adopters of new digital services, then if the price of the service or the price of the technology associated with the service is expected to decline, or the new service is likely to become more widely available, then trends observed for the early adopters may be telling.

The identity of early adopters is likely to vary by digital service, but an example of one possible group of early adopters is young adults, including those with limited budgets experimenting with lower priced choices.

Such a determination would require the ability to observe user trends by socio-demographic group and knowledge of the group likely to be an early adopter. The identity of the early adopter group might not be known, or there may be considerable variation in the identity of such groups, depending the technology and digital service at issue. In such situations, observation of trends by socio-demographic group might still be relevant in order to ascertain whether there appears to be relevant variation in adoption across groups. If yes, even if the early adopter group is not known with certainty, the likelihood of the group exhibiting an upward trend being an early adopter group can be assessed.

Similarly, adoption trends in other countries or geographic locations, particularly if the new service was available earlier in particular geographic location, may be relevant. In assessing such trends, where there are any factors, such as regulatory barriers, issues surrounding the availability of technology, or a likely, significantly higher price in Canada (or part thereof), that would suggest that Canada is not likely to follow a similar adoption pattern would have to be determined.

Canada typically has the benefit of products being first rolled out in the US. Adoption patterns and the impact on traditional services in that country can often speak to likely adoption in the Canada. In the new digital service context, considerations when making such comparisons include:

- Availability of required technology or service: a big consideration here is likely to be the availability of broadband, as well as any congestion issues on broadband in particular geographic areas. Most American and Canadian households now have access to broadband service, but, as the raging debate over “net neutrality” demonstrates, ISPs are concerned about the network congestion and the related degradation of the consumer experience that may be caused by widespread and intensive use of broadband video.
- Price point in Canada compared to that in the US: while the exchange rate is currently approximately at par, and service providers do normally consider the willingness to pay of consumers located in different countries, prices may nonetheless may be non-optimally higher in Canada if costs are higher. Higher prices may impact the speed of adoption in Canada as compared to the US, and also the competitive effectiveness of the service.
- Audio or audio-visual catalogue included in the service in Canada versus that in the US: the catalogue of programs available on the Canadian version of a service is at times smaller than the one available in the US. Reduced variety in a service may render it less appealing and so less likely to be substituted in favour of at the expense of a traditional service.

### **6.3.3 Adoption of the Same or Similar Technology for a Different End-Purpose**

If the new service in question relies on a technology that has been widely adopted for a different end-use, this may signal a greater likelihood of the new service’s adoption. This is more likely the case if the two end-uses have similar features. For example, if phones are already used to listen to music contained on the phone’s hard drive, users may be more willing to use the phone to stream a radio broadcast. As always, any additional barriers that the new service might face would have to be considered. For example, the quality of signal allowing for streaming would have to be assessed.

### **6.3.4 Industry Specialist Forecasts and Investor Related Statements**

Industry experts often undertake the task of trend-spotting and/or, based on their expertise, making predictions in regard to future directions. These warrant attention.

Also relevant are statements by both traditional and new service players in regard to their assessment of the competitive landscape, their forecasts in regard to future revenues, and any steps the services are taking in response to or in anticipation of competition. Such statements may be available publicly if the companies are publicly traded. For either publicly traded or privately-held companies, internal (typically, confidential) documents may also speak to these issues. Investment analyst assessments of publicly traded companies also tend to speak to expected future performance in the context of anticipated competition.

For both publicly traded and privately-held corporations, the availability of and terms of outside investment for both traditional and new services can speak to the anticipated longer-term profitability of the company. A company in decline may be less able to compete effectively in that it does not have available to it the financing required to invest in the product dimensions that consumers hold important.

### **6.3.5 Business Case**

As noted, users of a new technology may be, at least initially, limited, e.g., consumers who did not previously watch television through traditional modes. The viability of a business that has such limited appeal and the length of time for which it has limited appeal is relevant to the longer-term competitive effectiveness of the service. For example, even if the service remains viable, in appealing only to a narrow niche, it may not be able to invest in the product dimensions that would provide it wider appeal. Actual performance relative to budget or plan may speak to this (such an assessment typically relies on internal, confidential documents to the company; although in the case of publicly traded companies, some documentation may be available publicly).

### **6.3.6 Likely Future Product Developments/Features**

Companies' public and private documents often discuss plans in regard to new services and/or the features of development plans in regard to existing products. Such documents may also speak to the impetus for such developments, including the need to respond to competitive pressures. For example, a new digital service may be focused on obtaining the rights to additional programming, speaking to the competitive importance of such programming. Failure to obtain such additional rights by it or a similar service may then suggest it to be a weak competitive alternative, while success could have the opposite implication.

Similarly, given ongoing increased usage of handheld devices, plans to move into this realm can speak to its increased importance. However, care must be taken here in distinguishing between whether such plans or increased media/entertainment activity on

handheld devices more generally reflect an increase in overall media/entertainment demand or also a shift away from more traditional services. For example, a consumer might use a handheld device to stream a news service while on public transit, substituting away from the traditional news program he would have watched once at home.

Alternatively, that consumer may continue to watch the traditional news program or may not have watched the traditional news program in the first place, reflecting an increase in overall consumer demand for news programming as result of the digital service. As in the case discussed in the context of user trends, evidence on dual (or more generally, multiple) users is relevant to this issue.

## 7. An Example High-Level Application of the Proposed Tools

Market definition exercises are highly case-specific. This is true not only in regard to any conclusion about relevant markets but also in regard to the tools employed. The most relevant tools very much depend on case circumstances, including data and other information availability. That said, how and when the tools discussed in section 6 may be employed in a particular market definition exercise are discussed in the context of a hypothetical new on-line video service. The objective of the exercise is to list tools relevant to the determination of the product market in which the service participates. For purposes of this exercise, it is assumed that the relevant geographic market is Canada.

It should be noted that many, if not all, the tools noted below are best used in conjunction with each other. It is rare for any one tool to be determinative, and, as discussed in sections 3 and 6, with differentiation, this is particularly the case in regard to product characteristics.

### *On-Line Video Service Example*

Product Characteristics/End Use: What are the product characteristics and end-use of the on-line video service? Are there any product characteristics unique to the service or a subset of possible substitutes to the service that are so valued by (a particular set of) consumers as to likely place the service (and the subset of possible substitutes) into its own product market?

Documents/Data on Competitors and the Competitive Environment: Some companies track competitive information that may be informative.<sup>10</sup> If the hypothetical service were a publicly traded company, part of its reporting requirements would be to note its risk factors, which typically includes a discussion of its competitive environment. In addition, such a discussion may be supported to varying degrees with other publicly and non-publicly available documentation. Possible sources include:<sup>11</sup>

- Competitive tracking – Which companies' products does the service most readily track in terms of price and/or other product characteristics? Does the service purchase data from a third-party provider and, if so, what range of products and/or companies does it include in its purchases?

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<sup>10</sup> Firm practices in this regard vary greatly and little, if anything, can be concluded from the presence or absence of this type of information.

<sup>11</sup> While this type of information is typically a valuable source, it should be kept in mind that business markets need not correspond with antitrust markets or some other notion of market relevant to the CRTC's analysis.

- Win-loss reports – From which companies’ products does the service most frequently win sales? To which companies’ products does it most frequently lose sales? How do these products rank in terms of the products from which the service most often wins business or to which it most often loses business? These data may allow for a determination of diversion ratios, and in combination with its own and competitor price-cost margins on relevant products, a determination of a gross upward pricing pressure index.
- Marketing information: Does the service target its product marketing at any existing users of a potentially competing product?

Viability/Competitive Effectiveness: In the case of a relatively new product, it may not (yet) be an effective competitor and so, no matter the market in which it participates, a merger, for example, between the service and a potential competitor is not likely to result in a lessening of competition (relevant to this consideration may be the likely future competitive effectiveness of the service). What are the service’s sales and how do these compare to its plan? What are its renewal rates, for example, post a free month trial period? Is there any risk of market exit or an inability to make planned further investments?

Analyst and Other Industry Expert Sources: How do market analysts and other industry experts assess the service’s viability? Which products do they see as the main competitors? How do they assess the competitive impact of the service on these competing products? What developments do they see as necessary to the service’s success and the continued success of the potentially competing products? How do they assess the likelihood of these developments?

Potential Competitor Subscription Data: How have the subscription levels (including pay-per-view) of potentially competing products changed over time? Was there any noticeable change in their subscriptions levels or trends in their subscription levels upon the entry of the service into Internet-based subscription audio-visual services? Are there any changes in the sector, such as the entry of another potentially competing service around the same, time that might confound any observation? Where possible, there is likely value in controlling for other variables that might explain changes in subscription data.

Own and Competitor Price Data: What was the impact of the service’s entry on the price of potentially competing services? If data on other explanatory variables are available, such as costs, promotion periods, any relevant exogenous events (for example, such as the broadcasting of the Olympics), there is likely value in controlling for these. Is the time period since entry sufficiently long to measure its likely impact on competitors? One possible source of information relevant to this is the service’s expectations (as discussed in, for example, its budgets or business plans) in regard to its subscription levels.

Third-Party Data Sources: Do third-party data providers, such as Statistics Canada, BBM and AC Nielsen, have information on such items as viewership levels and consumer spend allocation across different media? What have viewership trends for particular services been and have these changed in any way since the entry of the service? Have consumers' allocation of their media spend changed in any way with the entry of the service? Have users continued to use other media in addition to the service? As before, note should be taken of any confounding factors such as the entry of other competing media around the time of the service's entry. In regard to consumer spend, aggregate changes in economic conditions may be relevant. As in the case of the use of subscription and price data, there may be value in controlling for other possible explanatory variables.

Early Adopters/US Experience: If the service entered the US and Canadian markets at approximately the same time, the US experience in regard to adoption of the service and possible impact on other audio-visual service providers is unlikely to speak to the likely development in Canada. The experience of other Internet-based services that entered the market prior to the new service may, however, be telling.

## 8. Conclusion

The introduction of Internet-based products and services is changing the landscape of the audio and audio-visual broadcasting and distribution industries. There now are alternative means of accessing television programming including video-on-demand and pay-per-view services offered by broadcasting distributors, Internet-based services, as well as broadcasters' own Web sites, and services geared to smart-phones, MP3 players, and tablet computers. In addition to changes in access, other sources of differentiation include: greater control over viewing time; greater variety in duration (e.g., limited time period rentals); increased mobility in service offering (e.g., access outside of home); and alternative payment methods (e.g., pay-per-view). The type of consumer equipment required for access to these services also has evolved. Also of consideration is access to content.

These new technologies may render the practice of market definition, an important component in many of the CRTC's regulatory activities, more complex. Furthermore, there are a number of features frequently found in audio and audio-visual product and service markets (e.g., high fixed costs and low marginal costs, "free" pricing, bundling, non-price competition, two-sided markets, vertically integrated production and distribution, and rapid technological change) that further confound the market definition exercise.

This additional level of complexity does not mean, however, that established tools and methodologies are outdated. The core objective, and so the core tools, of determining the boundaries of a market – to help identify market power, that is, the ability of a firm or a group of firms to profitably maintain prices above the competitive level for a non-transitory period of time – remain relevant.

As is often the case with differentiated products wherein a host of products will serve the same broadly similar end-use – in the case of audio and audio-visual products, news and entertainment – but with a range of different characteristics in variety of mixes, it is uncommon for a single product characteristic to be determinative of market definition. The form of access to the programming (e.g., through a mobile device or strictly at home), the sound and picture quality, the presence of advertising, the period over which the programming is available are but a few of the possible product characteristics users will consider in combination together with price when making their purchasing decisions. As such, it is not reasonable to simply conclude that an "old" technology and a "new" technology are within the same market because the same song, dramatic program, or sports event can be accessed via both. Rather, as laid out in the preceding sections, conducting a robust market definition exercise, especially in the technologically-fluid and highly differentiated audio and audio-visual sectors, often requires significant information, data and analysis. A particular product characteristic is often only determinative of relevant markets when its presence is critical to participation within a certain product market, e.g., access to broadband or in more narrow markets – typically arising as a result of the ability to price discriminate either directly or through a technique



such as bundling – access to certain types of programming such as live sporting events or first-run movies. Such product characteristics are also consistent with rapidly evolving markets where there may be tipping points from old to new technologies such that, regardless of the price of the old technology, the new technology becomes sufficiently cheap and ubiquitous so as to render the old technology obsolete (e.g., the move from VCRs to DVD players). Audio and audio-visual products and services are rapidly evolving and so are not immune to such a possibility, or more generally, quickly evolving degrees of substitutability across products. As such, particular attention to forward-looking indicators must be paid when assessing market definition.

Thus, as in all cases of market definition but particularly so with differentiated products in rapidly evolving markets, there is no “cook-book” approach to determining rigorously the market(s) in which new digital services compete. There are, however, key considerations to be taken into account when establishing the analytical techniques and data points that are typically necessary to assess. A range of empirical tools including natural experiments, diversion ratios, consumer spend allocation, and changes in subscription levels and downloads, plus forward-looking tools including user trends, early adopter evidence, specialist/expert forecasts, and business cases may be useful.

## Appendix: A Primer on Market Definition

### The Hypothetical Monopolist Test

The conceptual approach for delineating a market is typically the hypothetical monopolist test (“HMT”).<sup>12</sup> That is, a relevant market is defined as the smallest group of products and the smallest geographic areas in which a hypothetical monopolist would impose and sustain a small but significant and non-transitory increase in price (“SSNIP”) above current levels (or any other level appropriate for the analysis). The market definition analysis begins by postulating a candidate market and then asks whether a hypothetical monopolist controlling the group of products/geographic locations in the candidate market would impose a SSNIP, assuming the terms of sale of all other products available to buyers remain constant. If the price increase would likely cause buyers to switch their purchases to other products/geographic locations in sufficient quantity such that only a price increase less than a SSNIP is profitable, the postulated candidate market is not the relevant market, and the next-best substitute is added to the candidate market. The analysis then repeats by determining whether a hypothetical monopolist controlling the set of products/geographic locations in the expanded candidate market would profitably impose a SSNIP. This process continues until the point at which the hypothetical monopolist would impose a SSNIP. The set of products/geographic locations in the candidate market when a SSNIP is profitable is defined as the relevant market.

The HMT is, as noted, a conceptual approach. It is often not operationalized. Rather, a number of factors may inform market definition such as buyer behaviour, buyer views, functional interchangeability, and buyer switching costs. The HMT, however, can and should guide the use to which such factors are put. For example, if only some buyers face switching costs, what is relevant is whether the quantity of switches by buyers who do not face such switching costs to alternative suppliers is sufficient to discipline a price increase.

One attempt to operationalize the HMT is critical loss analysis. Critical loss identifies, for a given price increase (i.e., the SSNIP), the percentage of sales that can be lost before the increase becomes unprofitable. This percentage of sales, the critical loss, is then compared to an estimate of the actual loss associated with such a price increase by a hypothetical monopolist in the candidate market. If the predicted loss is greater than the critical loss, the candidate market should be expanded.

There are some issues with critical loss that must be considered in its use. In particular, it is based on “breakeven” analysis rather than the profit-maximizing analysis called for under the HMT. As such, the particular SSNIP considered in calculating critical loss may not be a price increase that a profit-maximizing monopolist would impose. The optimal price increase a monopolist would impose may well be greater. As such, the use of critical loss must be tempered with the consideration of what price increase would be profitable for the hypothetical monopolist through the consideration of a range of SSNIPs.

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<sup>12</sup> The information in this paragraph is largely based on information contained in the *Merger Enforcement Guidelines*, Competition Bureau, September 2004, at 3.5.

Another stumbling block in the use of critical loss is that it is often challenging to estimate the actual loss associated with a particular price increase for a candidate market. This is the case because historical analogies for the various possible candidate markets do not necessarily exist. For example, one can often rely on historical data to estimate the quantity lost by firm A when the price of product X was raised, but it is typically more challenging to determine the total quantity lost when the prices of firm A's product X and firm B's product Y were simultaneously increased, or, if the market were to be further expanded, the simultaneous price increases of products X, Y and Z.

An alternative to critical loss is critical elasticity. Critical elasticity is the maximum elasticity of demand a hypothetical monopolist could face at prevailing (or otherwise relevant) prices and still not experience a reduction in profit from a given SSNIP. As with critical loss, if a predicted actual elasticity for such a price increase is greater than the critical elasticity, the candidate market should be expanded. Unlike critical loss, critical elasticity does not suffer from the issue of the considered price increase not necessarily being profit-maximizing. If actual elasticity is less than critical elasticity, then a hypothetical monopolist would raise price by at least the SSNIP. It, however, does face similar informational challenges as critical loss in determining the estimated actual loss.

### **Market Definition and Price Discrimination**

Different purchasers of the same product from the same supplier can pay different prices. This is referred to as price discrimination. Price discrimination is a profitable strategy for firms as long as any costs associated with it (such as the costs associated with negotiating with buyers) are outweighed by the additional revenues from pricing higher to those buyers who place a higher value on the product in question. When the ability of a supplier to price discriminate is as a result of different competitive options available to different buyers, perhaps because of buyers' differing geographic locations or differing available technologies, relevant markets should be defined with reference to these differing classes of buyers, including differing buyer locations.<sup>13</sup> For example, if a seller can price discriminate, it might charge a higher price to a buyer who has fewer supply options available to it because certain types of technology are not available in the buyer's geographic location. That buyer's location would then be in a distinct geographic market from the market where buyers with greater technological access are located.

It is also of note that firms may attempt to price discriminate by offering different bundles of products and so induce buyers that fall into certain classes to self-select into groups who are willing to pay more for certain products.

If price discrimination is widespread in the sense that all prices are based on individual negotiation between seller and buyer, and each buyer has possibly different alternatives available to it, it may be challenging to define markets on the basis of classes of buyers and buyer locations. Price variation across potential class members may be too great. The

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<sup>13</sup> Price discrimination may be possible because, for example, different buyers have a different ability and willingness to pay. However, the markets in which these two different sets of buyers are found can normally be combined without any loss of generality if the competitive options available to both set of buyers are the same.

use of the HMT in such a context may give one a sense of whether on average one product or geographic location is a substitute for another, but it will not speak to whether any one individual buyer will benefit from the price constraining effect of a possible substitute.

### **Market Definition and Differentiated Products**

Defining markets accurately can be particularly challenging when products are differentiated. The question of where to draw the boundary between products (and locations if geographic location is an important source of differentiation) is often not clear when there are many brands of a product with relatively minor differences. In some cases, the distinction between a highly concentrated market, and one characterized by lots of market participants can depend on ‘close calls’ in market definition. This challenge results because market definition decisions are binary, while competitive effects ones are ‘smooth’.

### **Empirical Analyses**

As a result of this differentiation, there has been movement in merger analysis towards estimating the potential price effects of a merger directly through the reliance on a range of possible empirical exercises. Whether such techniques are available to merger analysis depends on the availability of data. More generally, tools used in merger analysis may require some modification to answer more general questions on market definition, where the question of interest is not necessarily just the price constraining effect of two particular firms’ products, but, for example, the degree of substitutability across old and new technologies.

Empirical tools that may be available include:

- 1) **Diversion ratios:** A diversion ratio is the percentage of total lost sales that is lost to a particular entity (or group of entities if that is more appropriate) should the price of one entity’s product increase by a small amount (the diversion ratio essentially combines the notion of a firm’s own-price elasticity of demand and the cross-elasticity of demand to a particular product or group of products). For example, if firm A loses 10% of its total lost sales to firm B’s product when the price of firm A’s product increases by a small amount, the diversion ratio from firm A’s product to that of firm B’s is 10%. If diversion is high, the more likely it is that the products in question are good substitutes. Diversion ratios in combination with incremental margins can be used to determine the upward pressure on their prices were the two products in question owned by the same firm. According to the newly drafted US *Horizontal Merger Guidelines*, if the value of diverted sales is “proportionately small” in comparison to the lost revenue attributable to the reduction in unit sales resulting from the price increase (known as the gross upward pricing pressure index), a price increase as a result of a merger across

the firms producing the products in question is considered “unlikely”.<sup>14</sup>  
<sup>15</sup> At this stage, there is no safe harbour associated with the gross upward pricing pressure index but there is a developing rule of thumb: if the gross pricing pressure index of less than 5%, the combination of the two products is considered unlikely to result in a price rise (i.e., the two products are not sufficiently close substitutes for a merger across the products to be considered problematic).

- 2) Natural experiments: This refers to the analysis of historical data where there has been a change in market structure over the period. The incidence of a change in structure due to, for example, entry of a new market participant, the introduction of a new technology, and the merger of two competitors, allows for an estimate of the price effect (or any other parameter such as volume of sales) of such a change. For example, if market prices declined with entry, this suggests that the entrant’s product is a substitute. (As in all empirical analysis, the robustness of any estimate will depend in large part on having controlled for other factors that could have simultaneously impacted the dependent variable.)
- 3) Cross-sectional analysis: This type of analysis estimates any difference in price (or some other dimension of competition) in one geographic region versus that in another where there is a difference in market structure across the two regions (for example, one region has a particular technology available to it, while the another does not.) Cross-sectional analysis should be used with caution since there is a possible myriad of factors that can impact regional price differences in addition to market structure and it can be challenging to properly account for them.
- 4) Price-correlations: If prices of particular products (or geographic locations) are *not* correlated, this typically suggests that the products are not in the same market. Elements to consider when carrying out such analysis include a determination of whether the time period over which correlation is assessed is long enough to robustly assess correlation, and whether there is sufficient variation in the data over that period to measure correlation. If, for example, the question of interest is whether a newly introduced product is a substitute, there might not be sufficient time to draw any conclusions about correlation and so substitutability. Alternatively, two products that are substitutes may be found not to be strongly correlated simply because their relative prices do not vary

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<sup>14</sup> *Horizontal Merger Guidelines*, US Department of Justice and the Federal Trade Commission, August 19, 2010, at 21.

<sup>15</sup> The Canadian Competition Bureau undertook a round of consultations on its *Merger Enforcement Guidelines* in the fall of 2010, wherein one of the questions for consideration was the increased use of empirical tools such as diversion ratios in place of more traditional approaches to market definition (see “Discussion Paper for the Merger Enforcement Guidelines Consultation”, Competition Bureau, at 2).

much over long periods and so whether there is sufficient variation in the data to draw any conclusion must be considered. Having taken the above into account and it is found that products are correlated, further analysis is required to draw any type of conclusion in regard to market definition.

In the use of any empirical technique, reference to the HMT continues to have value as it reminds one that the parties of interest in the analysis are the consumers (or potential consumers) of the products in question and what options those consumers have available to them at what price. It also underlies the fact that absent price discrimination, not every buyer need switch to a substitute for switching to have a price disciplining effect. Only an amount sufficient to thwart the profitability of the price increase need switch. Any empirical analysis that helps elucidate these issues are of value.

### **Complicating Factors in Defining Markets for Audio and Audio-Visual Products**

There are a number of factors that can complicate market definition in the case of audio and audio-visual products. None, however, undermine the conceptual approach of the HMT, but all must be considered in the market definition exercise and some, rapid technological change in particular, have implications in regard to the reliability of the use of historical information in defining markets.

#### **1) Large Fixed Costs/Low Marginal Costs**

While there can be challenges in actually measuring the price-cost margins on any particular product, one would expect margins to be lower in more competitive markets. As such, an observation of high margins could suggest that the product in question faces little competition. However, in any market characterized by large fixed costs but low marginal costs, were products priced at (or close to) their marginal cost of production, there would be inadequate return to pay for the fixed costs of production. Markets for audio and audio-visual products are typically so characterized.

Audio and audio-visual products typically have both high fixed costs at both the content and distribution level; that is, the cost of producing the programming and the cost of the infrastructure required to distribute the programming to end-users. However, once produced, the product can be provided to an additional person at zero marginal cost in regard to the cost of the content, and likely low marginal cost in regard to its distribution. As such, pricing audio and audio-visual products at marginal cost is not sustainable because the fixed costs of production would not be recovered.

In such cases, competitive markets with a variety of substitutes could be characterized by relatively high price-cost margins. Similarly, evidence of price discrimination would not necessarily imply a lack of competition but rather a means of value-based pricing in order to earn a return.

## **2) Pricing: Bundles, “Free” Content and Other Pricing Methods**

Market definition for audio and audio-visual products is further complicated by a range of pricing mechanisms, including the use of bundles, the availability of “free” content (e.g., over-the-air radio and television broadcasting), and a range of payment methods (e.g., pay-per-view, subscription, etc.).

### ***Bundling***

As noted above, bundling can be a means of price discriminating and markets characterized by price discrimination should be defined with reference to different classes of buyers or buyer locations if buyers in those classes or locations face different competitive options. Bundling allows for price discrimination by offering different packages that induce consumers who place higher value on a particular product to purchase a higher-priced package containing that product. For example, a broadcasting distributor may offer two bundles of programming, one with sports and one without. The bundle containing sports is relatively much higher priced since the broadcaster has exclusive rights to broadcast a large number of sporting events and there are a number of consumers who highly value such events. The other bundle has a relatively low price since it competes with a number of other broadcasters who offer similar programming. In such a situation, the class of buyers who buy programming with sporting events may appropriately be defined to partake in a distinct relevant market. This is of interest in the case of market definition not only because of the observation of price discrimination itself, but because the package with sports has different (and, in this case, more limited) competitive options than that without.

The sale of both audio and audio-visual content is often characterized by bundling. For example, songs can be sold in a group as part of an album or individually, and broadcasting distributors often offer packages containing a different mix of programming. Whether this changes the competitive options available to a consumer who values a particular mix of products must be considered in the market definition exercise.

### ***“Free” Content***

Certain media, such as over-the-air radio and television, are free to consumers in that no payment is made by consumers to these broadcasters. This complicates market definition when trying to determine the price-constraining effects of free programming on paid programming. An unsophisticated argument would be that free programming does not price constrain paid programming since, if it did, paid programming would also be free. However, with differentiated products, consumers may be willing to pay a premium for certain product attributes, such as greater variety. In the case of substitutes, the size of that premium will be limited by the availability of the free alternative, suggesting that the two products are in the same product market. Here the relevant HMT is whether a hypothetical monopolist over the paid programming would be able to profitably raise its price by a SSNIP or lose sufficient buyers to free programming so as to render the price increase unprofitable. When considering constraints on free programming, the question is more complicated since a price increase is typically not a possibility for such

broadcasters. Rather the relevant question is whether such broadcasters could restrict some non-price dimension of competition such as quality or variety of programming before losing sufficient consumers to paid programming so as to render any cost-savings from reduced quality/variety unprofitable.

### ***Other Pricing Methods***

Judging the price constraining effects of one audio or audio-visual product versus another may also be complicated by different pricing methods across potentially competing services. For example, one audio-visual distributor may sell its product on a pay-per-view basis, while another may sell unlimited viewership of a particular set of programming for a monthly fee. As in the case of free content, an observation of differences in payment methods is insufficient to conclude that two different products are in different relevant markets. Rather, an increase in the price of subscription based programming can be rendered unprofitable by switching to pay-per-view and vice versa.

### **3) Non-Price Competition: Variety of Products and Formats**

The above discussion of market definition in the case of alternative pricing methodologies also makes clear the importance of non-price competition. Important means of competition include variety and quality of programming, the programming content (e.g., does it include sports?), and the availability of programming (i.e., whether a particular program is available when the consumer wants to see it). In all cases, a means of competitive restraint, even possibly the main means, can be through these non-price dimensions, whereby the willingness of consumers to switch between a number of different audio and audio-visual products forces service suppliers to produce high-quality product that caters to a range of consumer preferences.

### **4) Two-Sided Markets**

The possibility of offering programming for free is made feasible by the existence of two-sided markets. In the audio and audio-visual context, these are markets where broadcasters not only provide services to consumers but also advertising to advertisers. Broadcasters' ability to sell advertising depends on their ability to attract viewers or listeners. This interrelationship impacts pricing on both "sides" of the two-sided market. In particular, broadcasters may choose to lower the price of their services to consumers (as noted, potentially all the way down to zero) not just due to the degree of competition between broadcasters for viewers/listeners but also due to the effect of the price decrease on viewership/listenership and so the appeal of the service to advertisers. As such, the broadcaster's pricing decision will also consider whether a decrease will sufficiently increase consumer demand so as to render the price decrease profitable by increasing the rates that can be charged to advertisers. Market definition in cases of two-sided markets must consider the implications of the other side of the market. For example, in the case of an observed price decline, a potential reason for such a decline could be consideration of the advertising side of the market as opposed to entry of a new service that coincided with the decline.



## **5) Stages of Production, Vertical Integration and Critical Inputs**

Even in its simplest form, audio and audio-visual markets are often characterized by two stages of production: content production and content distribution. Frequently, the number of stages is greater, e.g., the sporting event, production of the sporting event (i.e., filming, host, highlights, etc.), distribution of the sporting event. Markets are properly defined at the level of the supply chain that is of interest, e.g., content production as distinct from content distribution. Identifying competitors and the degree of competition at a particular stage of production can be complicated by the fact that some suppliers may be vertically integrated into various stages, while others are not, and others still are vertically integrated into different stages. Whether the vertically integrated firms offer the various services they produce to competitors is also relevant.

A firm that is involved in at least two stages of production may have an incentive to not sell its product/service at one stage of production to competitors in another stage of production in which the vertically integrated firm also competes, in an attempt to undermine the competitive effectiveness of those competitors. In the audio and audio-visual context, this issue may arise, for example, in regard to distribution facilities that provide access to end-users or in regard to content or a type of content key to a broadcaster's viability. Returning to the above noted example, if access to a particular set of sporting events is necessary to the viability to a sports broadcasting licensee, a company that is vertically integrated across production of such sporting events (or otherwise controls such sporting events) and broadcasting could have an adverse effect on the competitive effectiveness of the competing sports broadcaster.

In defining markets in such situations, what is relevant is proper identification of the market of interest. For example, the market for access to a particular type of facility used to reach consumers (e.g., satellite) may be quite limited but if the market of interest is the market for the provision of programming to end-consumers, and there are a variety of means of reaching those consumers (e.g., over-the-air, the Internet, cable, satellite), limited competition in access to one type of facility may be irrelevant if consumers are indifferent across a range of possible ways of accessing programming. If this is not the case, a lack of competition in the market for the facility can impact the degree of competitiveness of the downstream consumer market. (This concept is reflected in the Commission's decision to deregulate most cable retail rates once DTH services entered the market and provided new sources of competition.)

## **6) Availability and Price of Platforms Used to Deliver Services**

Related to the discussion of critical inputs is the issue of the influence of the availability and the prices of various upstream platforms on downstream competition. In the simplest case, if a certain platform is necessary for the provision of audio and audio-visual programming to consumers (e.g., broadband Internet), and it is not available in certain geographic areas, or its provision is technologically unreliable, or it is very costly, this can impact the downstream substitutes (and so the relevant market) available to consumers located within that geographic market. In such a situation, it is appropriate to define different geographic markets, with the consequent implication on product market

definition within those geographic markets, based on the availability (including availability at a price downstream consumers are willing to pay) of upstream platforms to downstream services.

### **7) Rapidly Evolving Technology**

There has been and continues to be considerable innovation in the means by which audio and audio-visual content is made available to end-users. (For example, it is not that long ago that most consumers would not have imagined that personal computers would be used to play music, television programs, and movies, and that no one had yet conceived of such devices as MP3 players and tablets.) This is likely to continue to be the case, particularly with the continuing evolution and adoption of smart-phone mobile services, allowing for greater streaming of audio and audio-visual streaming on mobile devices, resulting in greater (perhaps complete) convergence of telecommunication and broadcasting. Markets characterized by rapidly evolving technology pose challenges in defining markets in that defined markets may quickly become outdated, particularly if a market is on the verge of a ‘tipping point’ wherein consumers switch to new technologies in large numbers rendering the old technology obsolete (e.g., the switch from VCRs to DVD players). In such situations, using historical information, even relatively recent information, to define markets may prove misleading.