NERA
ECONOMIC CONSULTING

The ABCs of "Pick-and-Pay"

Jeffrey A. Eisenach, Ph.D.

June 2014

CONTENTS

I. INTRODUCTION 1

II. BUNDLING AND THE ECONOMICS OF DIGITAL VIDEO MARKETS 3

A. Economic Characteristics of Digital Video Markets 3
B. The Economic Evidence on Video Bundling 9

III. THE DIGITAL VIDEO MARKET IN CANADA 12

A. Structure and Performance 12
B. The Impact of Technological and Market Trends 16

IV. ASSESSING THE IMPACT OF "PICK-AND-PAY" 19

A. Policy Options 19
B. The Economic Effects of Mandated Pick-and-Pay 20

V. CONCLUSION 27

Executive Summary

Proposals to mandate the unbundling of video programming packages offered by pay TV operators are viewed by some consumers as offering a chance to reduce what they pay for video programming services while continuing to receive the programming of their choice. Both economic theory and a significant body of empirical research demonstrate otherwise. In fact, bundling is an economically efficient practice that benefits consumers overall.

The Canadian Radio-television and Telecommunications Commission (CRTC) is currently considering adopting regulations that mandate the unbundling of television programming. This paper explains why those proposals, however well intended, would ultimately harm Canadian consumers.

If the set of mandates proposed by the CRTC were adopted in full, the market for video programming would change in a number of ways which, taken together, would impose significant harm on Canadian consumers. Specifically, as explained below:

- Distribution of Canadian programming would drop, as some consumers chose not to purchase some programming services on a "stand-alone" basis. Prior research suggests penetration could fall by between 29 percent and 61 percent.

- Reduced distribution would lead to lower advertising revenues, both in terms of revenue per subscriber and total revenue. Total advertising revenue to Canadian specialty services could decline by over $870 million, or 67 percent.

- Because they would no longer be available "for free" to many consumers, programming services would incur significantly higher sales and promotion costs, and barriers to entry in the market for video programming would rise as a result of higher marketing costs.

- As a result of lower revenues and reduced distribution, some specialty services would no longer be economically viable and would exit the market. Consumers who place a high value on these lost services would suffer especially large reductions in consumer welfare.

- Overall, the loss of economies of scale and scope would increase costs and wipe out any savings consumers might experience from buying less programming. In the end, consumers would pay as much or more as they pay today, but receive less programming and have fewer choices.

The regulations being considered by the CRTC are unprecedented – no other nation has adopted such rules. Further, their implementation would require imposing a complex new regulatory regime on a rapidly changing marketplace. The indirect costs of such mandates are difficult to quantify, but would include a less dynamic, innovative digital video ecosystem than would exist in the absence of intrusive regulation. Thus, if the CRTC chooses to move ahead with some form of mandate, it should do so in a way that minimizes regulatory delay, inflexibility and uncertainty.

I. Introduction

Like cable and satellite operators throughout the world, Canadian pay TV distributors offer consumers a variety of choices for purchasing programming. A "basic tier" contains broadcast channels and other content of broad general interest, as well as some public service programming. Enhanced tiers offer additional bundles of "specialty" channels. Still other channels are available on a stand-alone (or "pick-and-pay") basis. Other services can be purchased program-by-program, either "pay-per-view" or "video-on-demand."[1]

For channels that are offered in tiers, the price a consumer pays to add an additional (desired) channel automatically includes access to other channels which the consumer may or may not choose to watch. This practice – which economists refer to as "bundling" or "bundled discounts" – is sometimes criticized as "forcing consumers to pay for channels they do not watch." However, the precise same transaction can also be described as automatically offering consumers who choose to purchase one channel a package of other channels for free.

While the economics of pay TV bundling are subtle and complex – as this paper lays out in some detail – at the end of the day the "buy one channel get several free" description of bundling is closer to the truth than the "make me pay for channels I don't want" alternative. There are several reasons why.

First, both pay TV distributors ("broadcasting distribution undertakings," or "BDUs") and content creators (television "services") have high fixed and low marginal costs: The costs of serving an additional subscriber are very low, once the pay TV infrastructure is built out; and, the costs of distributing a program to an additional subscriber, once the program is created, are very near zero. The challenge for such firms is to find a way to spread their large fixed costs over their customers – including, in the case of video, advertisers – in a way that generates sufficient returns to allow them to continue investing going forward. Hence, the price charged to any particular customer is not primarily a function of the costs of the content they receive, but rather of *their willingness to pay for the entire service, including the connection itself.* As I explain below, market-based bundling facilitates efficient pricing in this sense. Bundling can also reduce transactions and information costs – for example, by exposing consumers, at essentially zero cost, to channels they might otherwise never see.

To be clear, bundling is not *always* the most efficient option. Cost and demand characteristics often dictate that channels be offered on a pick-and-pay basis; and, as technology evolves and BDUs face growing competition from over the top (OTT) services and other new entrants, the extent of consumer choice is growing rapidly. The important point is that – at least assuming the relevant markets are workably competitive – *the market* will generally achieve the most efficient

[1] The different types of broadcasting services operating in Canada, and the regulatory obligations associated with each, are defined in CRTC, *Broadcasting Public Notice CRTC 2008-100* (October 30, 2008) (hereafter *CRTC Public Notice 2008-100*).

mix of bundled and pick-and-pay offerings. Thus, regulatory interventions that disrupt or eliminate market-based bundling can only make consumers worse off overall.

Despite the lack of economic justification for such regulations, regulators are frequently faced with calls for intervention based on the premise that consumers would be better off if they could pay for video content on a pick-and-pay basis. Currently, the Canadian Radio-television and Telecommunications Commission (CRTC) is considering new regulations that could impose a pick-and-pay mandate on content providers and distributors.[2] While such a mandate would certainly be *intended* to make consumers better off, its actual effects could very well be to seriously disrupt the broadcast distribution business, harm the digital video ecosystem, and reduce overall consumer welfare.

This analysis is intended to inform the CRTC's deliberations by explaining the relevant economic theories, presenting the results of relevant research, and assessing the likely effects of the proposed policy changes on the markets for video content and delivery. It must be noted at the outset that the policy changes under consideration are sweeping, complex and unprecedented, making it especially difficult to predict their effects with certainty or precision. This said, the theoretical and empirical evidence presented herein demonstrates that the contemplated skinny basic/pick-and-pay/build-your-own-package[3] mandate would limit the ability of BDUs to package video programming in economically efficient bundles, thereby inhibiting the exploitation of economies of scale and scope throughout the digital video ecosystem. Distribution of services not included in the basic package would decline, resulting in lower advertising revenues; and, the costs to consumers of discovering new programming options would rise, resulting in higher sales and promotional expenses. Some networks would fall below minimum efficient scale and exit the market, meaning that less content would be produced overall. While a few consumers (those with strong preferences for very small packaging lineups) could benefit, many consumers (especially those whose preferred programming disappears altogether) will be worse off; and, consumers overall are likely to be worse off. The precise nature and magnitude of these effects depends on thus far unspecified aspects of the proposed regulatory regime.

The remainder of this paper is organized as follows. Section II discusses the economic principles relevant to assessing bundling in video markets, including the effects of economics of scale and scope. Section III describes relevant characteristics of the digital video market in Canada. Section IV describes alternative possible forms of pick-and-pay regulation and assesses their likely impact on consumers. Section V presents a brief summary of conclusions.

---

[2] CRTC, *Broadcast Notice of Consultation CRTC 2014-190* (April 24, 2014)(hereafter *April 24 Notice*).

[3] Consistent with the CRTC's terminology, we will use "pick-and-pay" to refer to offering channels individually, sometimes also referred to as 'a la carte', and "build-your-own-package" to refer to offering channels in groups of 10, 15, 20, etc. as selected by the customers, sometimes also referred to as "pick-a-pack".

II. Bundling and the Economics of Digital Video Markets

Bundled discounting – the practice of selling products for lower prices when purchased together than when purchased separately – is a common feature of modern economies. Familiar forms of bundling include volume discounts (lower prices for multiple units) and package discounts (for different types of products when purchased together, such as shoes and shoelaces, and "triple-play" discounts for voice-video-data bundles from ISPs). Economists agree that bundling generates a variety of economic efficiencies and generally benefits consumers and the economy.[4]

The economic efficiency benefits of bundling are associated with certain market characteristics, including the presence of economies of scale and scope and complementarities in use. The first subsection below explains that digital video markets display many of the characteristics that tend to make bundling economically efficient. The second subsection reviews the literature on the effects of bundling in the market for distribution of television programming.

A. Economic Characteristics of Digital Video Markets

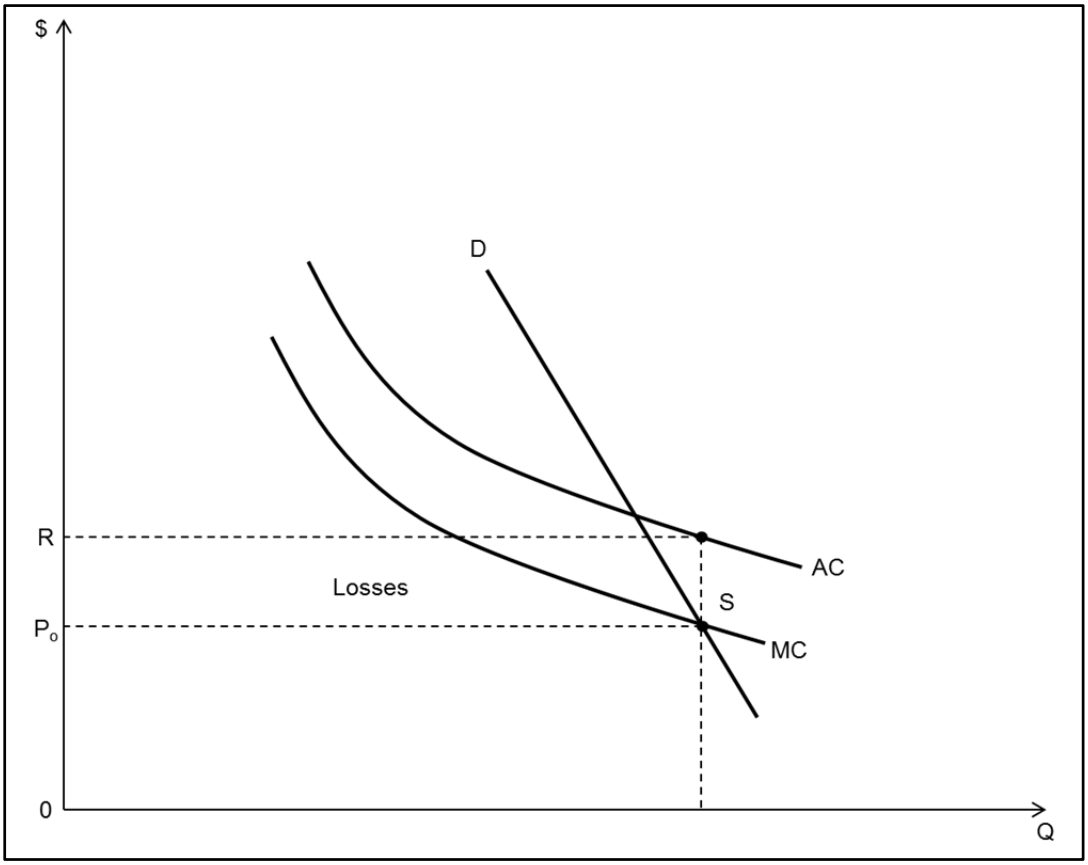
Bundling in digital video markets is motivated by five key economic characteristics. First, video markets are characterized by economies of scale and scope at both the upstream (video production) and downstream (video distribution) levels. Second, these markets are multi-sided, that is, they are supported by advertising as well as consumer subscription fees; and, the market for advertising is itself subject to economies of scale. Third, video markets offer differentiated products and face heterogeneous consumer demand, meaning simply that different consumers prefer to watch different types of programming. Fourth, like other markets with differentiated products, consumers must incur search costs to identify and learn about the available products. Fifth, both the upstream and downstream markets for video content are dynamically competitive. Each of these characteristics, individually and taken together, has important implications for understanding the effects of content bundling.

To begin, both video production and video distribution are characterized by economies of scale and scope in production. Like other forms of intellectual property, video content is governed by the "first copy" property: The first copy of a television program is very expensive to produce, but subsequent copies cost very little to make or distribute. Fixed costs are high and marginal costs very low. Economies of scale and scope in video distribution networks originate in the necessity for large, sunk investments in distribution infrastructures, whether they are wired or wireless, terrestrial or satellite based. Once a system is deployed, the cost of serving an additional customer is relatively low. It is also true – and crucially important in understanding the economics of pick-and-pay – that video distribution is subject to strong economies of scope: Once a consumer is connected to the network, the incremental cost of delivering an additional

[4] See generally Bruce H. Kobayashi, "Does Economics Provide a Reliable Guide to Regulating Commodity Bundling by Firms? A Survey of the Economic Literature," *Journal of Competition Law and Economics* 1(4) (2005) 707-746.

channel of content is essentially zero. In economic terms, these characteristics imply that the average cost curve for digital video products is declining over the relevant range of output: Simply put, it always costs less to produce an incremental unit of output than it cost, on average, to make the previous ones.

FIGURE 1:
LOSSES WITH MARGINAL COST PRICING AND ECONOMIES OF SCALE



Source: NERA Economic Consulting.

Such markets pose a fundamental economic dilemma: Economic efficiency is typically maximized when prices are set equal to marginal cost, but in an industry in which marginal cost is below average cost, setting price equal to marginal cost is not feasible, since it means the firm would lose money on every unit sold (and ultimately go out of business).[5] (See Figure 1.)

[5] The pervasiveness of these characteristics in high-tech industries is widely recognized. See, e.g., Hal R. Varian, "Differential Pricing and Efficiency," *First Monday* 1;2 (August 1996) at 2 ("[M]any important industries involve technologies that exhibit increasing returns to scale, large fixed and sunk costs, and significant economies of scope. Two important examples of such industries are telecommunications services and information services. In

Achieving an economically efficient outcome in such industries depends on finding a way to charge some consumers – i.e., those with a higher willingness to pay ("less elastic demand") – a sufficiently high price to defray the fixed costs of creating the product in the first place, while still permitting "marginal" consumers (those with "more elastic demand") to purchase the product at a price at or near marginal cost. Thus, while the phrase "price discrimination" may have a negative connotation (e.g., for those who associate it with predatory pricing), the phenomenon of charging different prices to different consumers for what is essentially the same good is not only widespread, but is both necessary for economic efficiency and, in competitive markets, a virtually inevitable result of competition.[6]

An important point here is that in markets like video production and video distribution, prices are not and should not be determined entirely, or even mostly, on the basis of costs. Rather, such markets can only maximize consumer welfare when pricing is governed by efficient price discrimination: Charging different prices to different types of customers, based on their willingness to pay, so that as many consumers as possible can benefit as much as possible from the product. As explained further below, bundling facilitates efficient price discrimination.

A second, and related, characteristic of video markets is that they are "multi-sided," meaning that they function in part by bringing together different types of customers, each of which attaches a value to the presence of the other type. Advertising supported media is the classic example of a multi-sided market, in which sellers of advertising (newspapers, broadcasters, etc.) offer content to downstream subscribers (or viewers, or listeners) who, in turn, attract advertisers willing to pay to defray all or part of the cost of the operation.[7] A key economic function of firms that operate such multi-sided platforms is to set prices (and product attributes) so as to attract the optimal mix of upstream and downstream customers: A newspaper that relies too heavily on advertising will make itself unattractive to subscribers, but too little advertising may force it to raise subscription rates, thereby having the same effect. Put differently, a central component of the multi-sided platform operator's job is to efficiently price discriminate between its upstream and downstream customers, i.e., to set prices that maximize the total welfare generated for both groups.[8] By allowing distributors to attract more consumers into the market, bundling also helps achieve an efficient mix of advertisers and "eyeballs."

---

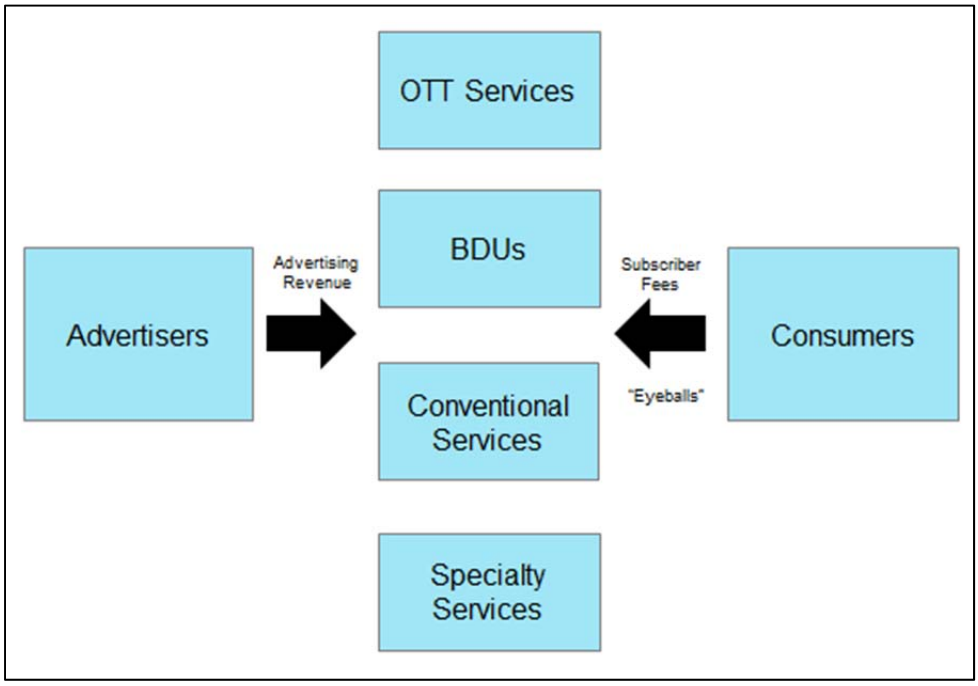
each of these cases the relevant technologies involve high fixed costs, significant joint costs and low, or even zero, marginal costs. Setting prices equal to marginal cost will generally not recoup sufficient revenue to cover the fixed costs and the standard economic recommendation of 'price at marginal cost' is not economically viable. Some other mechanism for achieving efficient allocation of resources must be found."); see also Jeffrey A. Eisenach, *Broadband Competition in the Internet Ecosystem*, American Enterprise Institute (October 2012) (hereafter Eisenach (2012)).

[6] See e.g., William J. Baumol and Daniel G. Swanson, "The New Economy and Ubiquitous Competitive Price Discrimination: Identifying Defensible Criteria of Market Power," *Antitrust Law Journal* 70 (2003) 661-685 at 665.

[7] See e.g., Mark Rysman, "The Economics of Two-Sided Markets," *Journal of Economic Perspectives* 23;3 (Summer 2009) 125-143 at 128 (hereafter Rysman) ("Newspapers are a canonical two-sided market, where the newspaper provides a platform for communication from advertisers to consumers.")

[8] See Rysman at 131 ("Another important issue in a two-sided framework is price discrimination. In a situation of demand heterogeneity, standard price discrimination -- for instance, by manipulating the prices for participation

FIGURE 2:
ADVERTISERS, INTERMEDIARIES AND CONSUMERS IN TWO-SIDED DIGITAL VIDEO MARKETS



Source: NERA Economic Consulting.

The third key characteristic of digital video markets is the presence of differentiated products and heterogeneous consumer demand – i.e., the fact that each channel or network carries different content, and different consumers have different preferences across channels. Some consumers prefer to watch sports, others news, and still others entertainment; and, other things equal, consumers also value variety and choice (in public policy terms, this is sometimes referred to as the value of diversity).[9] Where consumers have different preferences or value diversity, products whose value to consumers exceeds their cost to society may not be produced at all unless they are bundled together.[10] Thus, bundling is not only desirable but necessary to maximize consumer welfare.

---

and usage – allows a platform to capture more of the surplus on the side with discrimination. Thus, discrimination increases the value extracted on one side, which leads to lower prices on the other side which has now become more valuable.")

[9] For a profile of Canadians' diverse programming preferences, see Harris/Decima, *Let's Talk TV: Quantitative Research Report* (April 24, 2014) (available at http://www.crtc.gc.ca/eng/publications/reports/rp140424.htm) (hereafter *Harris/Decima Report*).

[10] This point was first recognized by economist George Stigler. See George J. Stigler, "A Note on Block Booking," in *The Organization of Industry* (Chicago: University of Chicago Press, 1968) 165-171.

To understand why, consider the following simple example. Suppose there are two products, which we will call Network X and Network Y. Each costs $6 to produce and, once created, can be distributed to as many consumers as desire to have it without diminishing the amount left for others. (In economic terms, the goods are – like TV programming – "non-rivalrous.") Suppose further that there are two consumers, Aaron and Betty. Aaron values Network X at $5 and Network Y at $2, while Betty values Network X at $2 and Network Y at $5. Note that this example has the characteristics described above: high fixed costs, low marginal costs, differentiated products, and heterogeneous consumer demand.

TABLE 1:
HYPOTHETICAL CONSUMER VALUATIONS OF TWO PRODUCTS

Network	Aaron	Betty
X	5	2
Y	2	5
Bundle	7	7

Source: NERA Economic Consulting.

Suppose bundling is prohibited, such that each network must be offered separately. As can be easily discerned, the most either consumer will pay for either network is $5. However, if the price is set at $5, only one unit will be sold, and the revenues for each network will not be sufficient to cover the $6 cost of production. Similarly, if the prices for each network is set at $2 (so that each consumer purchases the network), total revenues are only $4, two dollars short of what is required. No matter what prices are set, if bundling is prohibited neither network will be produced.

If bundling is permitted, on the other hand, each consumer will happily pay up to $7 for the two networks combined, generating $14 in revenue, $2 more than is needed to cover costs. Thus, allowing bundling causes both products to be produced, and social welfare is increased by $2 relative to the non-bundling world. By combining demand for the two products, consumers are able to signal to producers that their total valuation exceeds the cost of production.

A fourth characteristic, which goes hand in hand with product differentiation, is that consumers must incur search costs in order to identify and choose which programming to watch. Increasingly sophisticated electronic program guides reduce the costs to consumers of choosing among available programs, but the ability to actually sample is limited to the channels to which the consumer "subscribes." Bundling – giving consumers free access to channels which they may not watch, or may watch only infrequently – thus serves to lower search costs by allowing consumers to sample programming about which they might otherwise be unaware. Consumer

research suggests that a large proportion of television viewing decisions are made through such "channel surfing" behavior.[11]

Each of these characteristics – economies of scale and scope, multi-sidedness, product differentiation and consumer heterogeneity, and high search costs – helps to explain the prevalence of bundling in video distribution. A fifth characteristic, however, must also be taken into consideration: the competitiveness of the markets for video creation and distribution.

To begin, the conditions necessary for bundling to have anticompetitive effects are extremely narrow (and unlikely to exist in actual markets).[12] In addition, overall social welfare is generally increased as a result of the production of additional units (e.g., more programming services) that are valued by society at more than the cost of production. While it is theoretically possible for consumers to be made worse off as a result of price discrimination if they capture less of the total surplus, this result typically does not apply in dynamically competitive markets.[13] Moreover, competition does not need to be perfect: It is only necessary, as is the case in video markets, that consumers be able to choose between producers of differentiated products – e.g., between satellite, cable and IPTV services – or that new entry ("potential competition"), such as from OTT services, is feasible. It can easily be shown that under these circumstances, competition will drive the market to produce an economically efficient "mix" of bundled and unbundled services.[14]

As discussed in Section IV below, both of these characteristics – choice and potential competition – are present in the Canadian video content and distribution markets.[15]

---

[11] See Federal Communications Commission (FCC), *Report on the Packaging and Sale of Video Programming Services to the Public* (November 18, 2004) at 14-15 (hereafter *FCC 2004 Report)* (citing research that nearly half of consumers find new channels to watch through channel surfing).

[12] See Antitrust Modernization Commission, *Report and Recommendations* (April 2007) at 94-100 (available at http://govinfo.library.unt.edu/amc/report_recommendation/amc_final_report.pdf).

[13] See e.g., William J. Baumol, "Regulation Misled by Misread Theory," AEI-Brookings Joint Center for Regulatory Studies (2006) at 3 ("[I]n equilibrium, these discriminatory prices are not haphazard in their welfare properties but will generally constitute a Ramsey optimum – satisfying the second-best welfare attributes of revenue-constrained economic welfare.").

[14] See Jeffrey A. Eisenach and Richard E. Ludwick, "The FCC's Further Report on a La Carte Pricing of Cable Television," CapAnalysis. Inc., (March 2006) at A14-A16 (available at http://apps.fcc.gov/ecfs/document/view;jsessionid=KrgwTWwNVnZJYvJGYyjqCWpyp9TfXF5Qv2L9BWmQzFJh6WNk6Lbn!1675925370!1281169505?id=6518330666) (hereafter Eisenach and Ludwick (2006)).

[15] See e.g., Einer Elhauge, "Why Above-Cost Price Cuts to Drive Out Entrants are Not Predatory – and the Implications for Defining Costs and Market Power," *Yale Law Journal* 112 (January 2003) 681-827 at 687 ("Competition or low entry barriers will ensure that overall revenue from this output-maximizing price-discrimination schedule does not exceed economic costs.")

B. The Economic Evidence on Video Bundling

Economists and industry analysts have undertaken a number of studies of the economics of video bundling. The overwhelming weight of this evidence supports the conclusion that bundling is economically efficient and, on balance, increases consumer welfare. The empirical studies also provide a range of estimates for the impact of mandatory unbundling on key performance metrics which can be used to assess the likely effects of the CRTC's proposals.

The most sophisticated study of the effects of mandatory unbundling in video distribution markets is Crawford and Yurukoglu (C&Y).[16] Using an extensive U.S. data set, they model the behavior of consumers, distributors, and program creators. C&Y's theoretical model allows them to take into account both the direct effects of allowing consumers to choose among individual channels and the short-run impact of mandatory unbundling on upstream costs. They find that pick-and-pay mandates would more than double the prices paid by distributors for programming in the short run, wiping out any potential gains in consumer welfare. And, while they estimate that short-run total welfare might increase as a result of higher industry profits, they also note that that "[i]mplementation or marketing costs associated with a la carte would likely reduce both [consumer and total welfare] in the short run."[17] Thus, they conclude, "Our qualitative conclusion is that consumers could in principle benefit from mandatory à la carte at existing input costs, but would not in practice benefit due to input cost renegotiation in an à la carte world."[18] In other words, the price a service charges a BDU would need to increase in order to ensure the quality of the service didn't suffer.

C&Y also estimate the impact of build-your-own-package and themed tier mandates and find that the "outcomes under both … are worse for consumers." They estimate that a mandated build-your-own-package option would lower consumer welfare by 8.8 percent, while mandating themed tiers would make consumers worse off by 22 percent.[19] Essentially, they find that these options achieve the worst of both worlds: input prices still go up, but consumers benefit (even in the most immediate sense) little or not at all.

Importantly, the C&Y model does not attempt to account for longer-run consequences of mandatory unbundling, such as increased search costs for consumers, increased marketing costs for firms, or the potential for smaller channels to disappear altogether.[20] Taking these effects into

---

[16] See Gregory S. Crawford and Ali Yurukoglu, "The Welfare Effects of Bundling in Multichannel Television Markets," *American Economic Review* 102(2) (April 2012) 643–685 (hereafter Crawford and Yurukoglu).

[17] See Crawford and Yurukoglu at 644.

[18] See Crawford and Yurukoglu at 679.

[19] See Crawford and Yurukoglu at 679.

[20] See Crawford and Yurukoglu at 675: ("We assume that preferences are invariant to the policy change. As discussed above, we assume that channels do not alter their programming following the policy change, nor do new channels enter or existing channels exit. We assume the technical, administration, billing, and marketing costs of firms are the same when firms are allowed to bundle as when firms are forced to sell channels à la carte. Finally, we assume that households don't incur any extra cognitive costs from choosing from the larger choice set.").

account would result in an even more negative assessment of mandated unbundling. Moreover, their results do not depend on a decision by the regulator to regulate the prices of either pick-and-pay or build-your-own-package offerings.

Another recent empirical study, by Dmitri Byzalov, found similar results. Byzalov models consumer choice of cable and satellite packages in a way that allows for the identification of consumers' willingness to pay for individual channels, and uses these estimates to simulate a "themed-tiers" mandate (comprised of seven mini-tiers). Even holding cable subscribership constant and programming costs constant, Byzalov finds that consumers would gain at most 35 cents per month from unbundling. However, Byzalov also notes that this is a "best case scenario." More realistically, he explains:

> [C]able networks are likely to lose a lot of subscribers, which will significantly reduce their license-fee revenues. The loss of subscribers is likely to force the networks to sharply increase the wholesale license fees they charge per subscriber, in which case unbundling would hurt consumers.[21]

Indeed, Byzalov finds that mandatory unbundling would result in a 40 percent drop in subscribership for the average cable network not carried on the basic tier,[22] and that prices for most tiers would rise, with the price for the sports tier more than tripling.[23]

Finally, Byzalov is also able assess the distributional effects of mandatory unbundling, and finds that "consumers who lose from unbundling are disproportionately larger, poorer households."[24]

A third empirical analysis, conducted by Booz Allen Hamilton (Booz Allen) in 2004, found that "[u]nder each of the scenarios evaluated, consumers would be worse off than today. Consumers would either pay more than today for far fewer channels, or would need to select as few as six cable networks to reduce their monthly bill below current levels."[25] In addition to higher prices, the Booz Allen study also found that:

> [N]etworks would face much more challenging economics due to lost advertising and higher marketing expenses. Advertising would fall by between 20% to 60%, depending on the specific network segment due to lost viewing and falling rates for advertising inventory as cable became a less efficient medium for advertisers. In addition, network

---

[21] See Dmitri Byzalov, "Unbundling Cable Television: An Empirical Investigation" (July 2010) at 1 (hereafter Byzalov).

[22] See Byzalov at 40. Viewership would drop for six of the seven mini-tiers he analyzes, with sports (67 percent) and non-premium movies (46 percent) losing the most viewers. See Byzalov at Table 7b.

[23] See Byzalov at 41.

[24] See Byzalov at 39.

[25] See *The a la Carte Paradox: Higher Consumer Costs and Reduced Programming Diversity An Economic Analysis of the Implications of a la Carte Pricing on Cable Customers*, Booz Allen Hamilton (July 2004) at 1 (hereafter Booz Allen).

> marketing expenses would need to increase from today's 2% to 6% of revenues, to as much as 20% to 30% of revenues.[26]

The Booz Allen study formed part of the evidentiary basis for a formal inquiry conducted by the FCC. Based on the extensive record gathered in that matter, the Commission concluded that "the bundling of video programming for sale to consumers is likely a welfare-enhancing activity, after accounting for the cost savings and quality improvements, as well as the positive impacts to promote the production of valuable programming." [27]

While a subsequent report by FCC staff questioned the earlier report's findings, the staff study was widely criticized for failing to rebut or even acknowledge multiple economic studies submitted in the 2004 record, nearly all of which supported the Commission's conclusion, as well as reports by independent investment analysts reaching similar conclusions.[28] An independent review by the Congressional Research Service found that while "none of the studies or reports issued to date can be deemed definitive… an a la carte approach could have serious implications for diversity;" that "[r]equiring operators to offer all options might not meet the needs of all households … because the migration of some threshold number of households to a la carte pricing could undermine the economic feasibility of large tiers;" and, in any case, "that technological change is likely to precipitate new market dynamics."[29] As discussed below, that is precisely what has occurred with the rise of OTT programming services, which are radically changing market dynamics.

More recently, reports from independent investment analysts have also concluded that mandatory unbundling would have negative consequences for consumers and for the digital video ecosystem overall. For example, the Commission has already taken note of a December 2013 report by Needham Research which concluded that mandated unbundling in the U.S. would cause approximately two-thirds of pay TV networks (i.e., specialty networks) to become economically unviable.[30] The Needham study also estimates a proxy for consumer surplus associated with television viewing, noting that the cost per hour of television watched is far below consumers' opportunity costs, as measured by wage rates. On that basis, the study estimates that the loss of programming choices caused by mandatory unbundling would be between $80 billion and $113 billion per year – in other words, mandatory unbundling could reduce the welfare of each U.S. household by nearly $1,000 annually. Other recent studies that have focused specifically on the impact of pick-and-pay proposals in Canada are discussed further below.

---

[26] See Booz Allen at 35.

[27] See *FCC 2004 Report* at 86.

[28] An assessment of both the 2004 and 2006 FCC A La Carte reports, and the key economic studies upon which they were based, is contained in Eisenach and Ludwick (2006).

[29] See Charles B. Goldfarb, *The FCC's "a la Carte" Reports*, *Congressional Research Services* (March 30, 2006) at 15 (available at http://research.policyarchive.org/2789.pdf).

[30] See Laura Martin, *Valuing Consumers' TV Choices*, Needham Insights (December 1, 2013) (hereafter Martin).

III. The Digital Video Market in Canada

The Canadian market for digital video is dynamically competitive, with hundreds of conventional, specialty, pay-per-view and VOD programming options, and multiple firms offering BDU services through cable, DTH and IPTV infrastructures. Entry has occurred into both programming and distribution markets; and, with the vast majority of Canadian households now connected to broadband, OTT services offering a variety of both pick-and-pay and bundled offerings are making significant inroads, leading to significant changes throughout the video ecosystem. The industry also operates within an extensive regulatory framework, administered by the CRTC. The first subsection below briefly describes characteristics of the industry's structure and performance that are most relevant to issues at hand, and also briefly discusses the current regulatory framework. The second section discusses the ways in which technological and market forces are affecting the industry.

A. Structure and Performance

As the CRTC itself explains in its *April 24 Notice*, "[t]he Canadian television system is a thriving industry that directly employs almost 60,000 people. This system offers a wide range of over 700 Canadian and non-Canadian services."[31] In its annual *Monitoring Report*, the Commission details the sector's strong performance and its contribution to the Canadian economy. In 2012, 86 percent of Canadians subscribed to cable or satellite television service, and 78 percent subscribed to high-speed Internet service.[32]

Like video content and distribution markets elsewhere, the Canadian market is not characterized by textbook variety "perfect competition."[33] Rather, as noted above, both markets are characterized by high fixed costs, product differentiation and rapid innovation – all characteristics associated with "dynamic competition."[34] In such markets, traditional measures of market concentration are understood to be less relevant in predicting industry performance (if relevant at all). Rather, economic efficiency in dynamically competitive markets depends on the ability of existing firms to innovate, of new firms to enter the market, and of consumers to exercise choice.

Canadian video markets exhibit all of these characteristics. For example, the number of television services authorized to operate in Canada grew from 701 to 744 between 2011 and 2012 alone; the number of French language services grew by 40 percent, from 101 to 141. More than three quarters of the increase in total services occurred among Canadian services.[35] In terms of choice, while the CRTC

---

[31] See *April 24 Notice* at ¶12.

[32] See CRTC, *Communications Monitoring Report* (September 2013) at ii (hereafter *2013 Monitoring Report*).

[33] The CRTC has indicated it will not approve transactions that would give any one entity control over more than 45 percent of the total television Canadian audience share, and will closely scrutinize transactions that would raise the level above 35 percent. See CRTC, *Diversity of Voices, Broadcasting Public Notice CRTC 2008-4* (January 15, 2008) at ¶87 (available at http://www.crtc.gc.ca/eng/archive/2008/pb2008-4.htm).

[34] For a complete discussion, see Eisenach (2012).

[35] See *2013 Monitoring Report* at 76.

does not report churn rates for BDUs, it does report that, on average, monthly turnover among high speed internet subscribers is 1.83 percent, implying that more than one out of five subscribers switch providers each year.[36] No BDU serves more than 30 percent of video subscribers,[37] and, in terms of programming diversity, viewing hours are spread out over eight major ownership groups, none of which serves more than roughly a third of the overall market.[38]

The upshot is that Canadian consumers can and do choose from a variety of traditional programming and distribution services, each of which has strong incentives to satisfy consumer demands for a variety of programming choices and packages, while also taking into account the effect of those choices on prices and program availability.

While Canadian video markets are subject to significant competition and entry, they also operate within an extensive regulatory framework. CRTC regulations distinguish between broadcast services, on the one hand, and specialty services (i.e., those not broadcast over the air), on the other. The rules further classify specialty services into three main categories, Category A, Category B, Category C news services and Category C sports services, which are subject to differing regulatory regimes. As shown in Figure 3 below, Category C news services are subject to both mandatory carriage and must comply with Canadian content obligations; as of May 19, Category C news services that are part of a discretionary package are also required to be offered separately (i.e., unbundled).[39] Category A services are required to be offered by all BDUs (though they also can be offered on any tier) and are also afforded genre protection, meaning that they are protected against competition from Category B services offering similar content. Category A services are also subject to significantly higher Canadian content requirements than Category B services. Category B services and Category C sports services are not required to be carried by BDUs and do not have genre protection, although Category C sports services do have significant Canadian content obligations. Finally, 9(1)(*h*) services are required to be carried on the basic tier by all but a handful of exempt BDUs.[40]

---

[36] See *2013 Monitoring Report* at 143.

[37] See *2013 Monitoring Report* at 112.

[38] See *2013 Monitoring Report* (citing BBM Canada) at 85 (is prior to BCE's acquisition of Astral).

[39] See CRTC, *Broadcasting Order CRTC 2013-735* (December 19, 2013) (available at http://www.crtc.gc.ca/eng/archive/2013/2013-735.htm).

[40] See CRTC, *Broadcasting Regulatory Policy CRTC 2013-372* (August 8, 2013) (available at http://www.crtc.gc.ca/eng/archive/2013/2013-372.htm).

FIGURE 3:
BROADCASTING SERVICE REGULATORY CLASSIFICATIONS

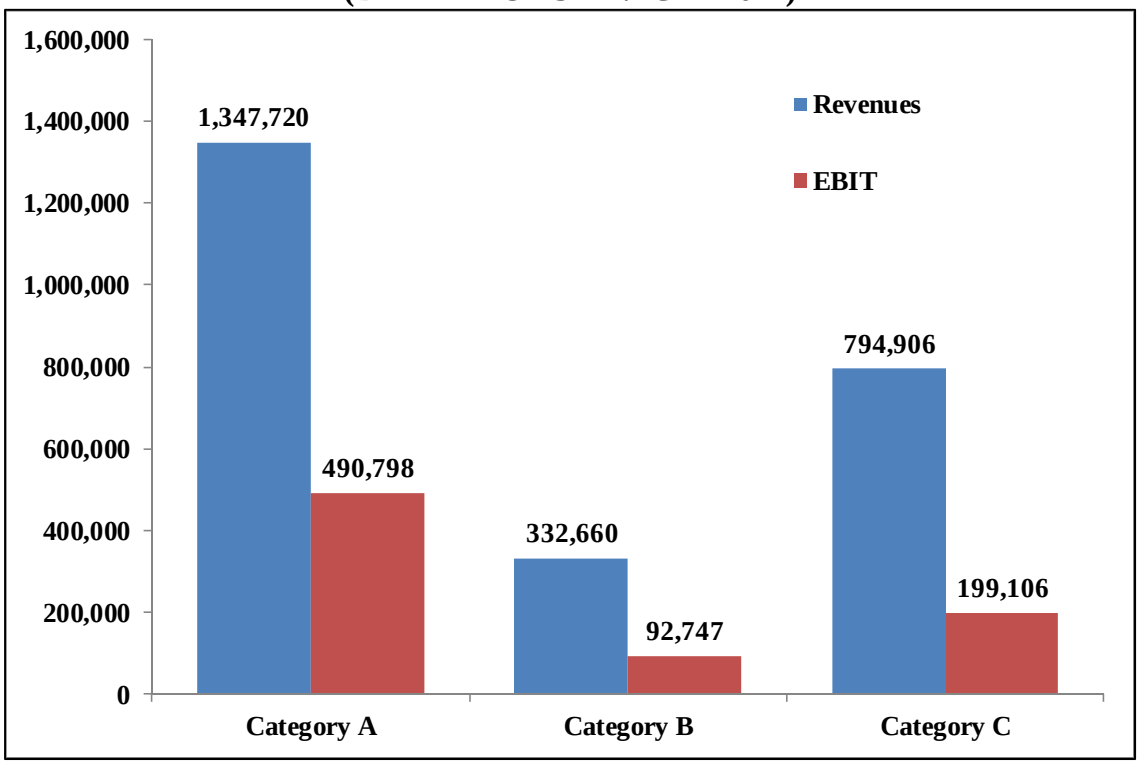
Category	Description	Sub-Type	Service Count	Mandatory Carriage	Advertising Allowed	Format Protection	Canadian Programming Expenditures (CPE)
A	Services with mandatory carriage. Current analog services and former Category 1 services excluding national news and mainstream sports networks.	Specialty	60	X	X	X	CPE requirements are set on a service-by-service basis.
		Pay	7	X		X	
B	Services without mandatory carriage. Former Category 2 services. Considered to be more niche by CRTC.	Specialty	126		X		CPE requirements for services with more than one million subscribers.
		Pay	3				
C	Genres the CRTC has opened up to competition. National news and mainstream sports broadcasters.	Specialty	10	X	X		50% of Gross Revenues minimum.
9(1)(h)	Services with mandated carriage on the basic service tier (in specified areas) approved under Broadcasting Act Section 9(1)(*h*). Networks that make "an exceptional contribution to Canadian expression and reflects Canadian attitudes, opinions, ideas, values and artistic creativity".		10	X	X	X	There is no minimum requirement, but to warrant 9(1)(*h*) status services must have CPE higher than Category A services.

Source: CRTC.

Under the CRTC's proposal, Category A services would see a dramatic shift from their current regulatory status – in which they are ensured both mandatory carriage on BDUs and genre protection – to a "sink or swim" environment in which each service would be offered pick-and-pay to all BDU subscribers. As discussed below, the likely consequence would be a significant reduction in the reach of Category A services and, as a direct result, a significant drop in their advertising revenues, which currently account for approximately 50 percent of total Category A revenues.[41] As shown in Figure 4, Category A services are by far the largest set of services in terms of both revenues and profits.

[41] See CRTC, *Individual Pay Television, Pay-Per-View, Video-on-Demand Statistical and Financial Summaries, 2009-2013* (available at http://www.crtc.gc.ca/eng/stats4.htm).

FIGURE 4:
REVENUES AND EBIT FOR ENGLISH LANGUAGE SERVICES
(BY TYPE OF SERVICE - 2012)



Source: Credit Suisse.

The CRTC publishes detailed financial information on specialty services, including breakdowns of revenues (e.g., advertising versus subscription) and expenses (e.g., programming expenses vs. sales and promotion expenses). Table 2 below presents a summary of this data for 2013, showing average levels and percentage breakdowns for each financial metric and each category of service.

TABLE 2:
AVERAGE FINANCIAL AND PERFORMANCE METRICS
(SPECIALTY SERVICES, BY CATEGORY, 2013)

Category	A		B		C		All	
	($)	(%)	($)	(%)	($)	(%)	($)	(%)
Network Count	60		126		10		196	
Revenue								
Residential/Bulk/SMATV Subscriber Revenue	9,864,284	34%	1,603,628	46%	60,446,452	54%	7,134,585	42%
DTH Revenue	3,917,272	14%	831,238	24%	19,634,413	18%	2,735,288	16%
Local Advertising Revenue	390,584	1%	45,343	1%	4,104	0%	148,925	1%
National Advertising Revenue	14,301,828	49%	838,807	24%	30,431,670	27%	6,469,980	39%
Other Revenue	428,754	1%	151,547	4%	1,540,334	1%	307,263	2%
Total Revenue	28,902,722		3,470,564		112,056,974		16,796,041	
Expenses								
Programming and Production	13,279,709	72%	1,484,678	59%	69,826,280	84%	8,582,218	75%
Technical	906,581	5%	307,146	12%	2,004,078	2%	577,225	5%
Sales and Promotion	1,767,805	10%	248,324	10%	4,881,198	6%	949,843	8%
Administration and General	2,443,727	13%	486,263	19%	6,140,429	7%	1,373,964	12%
Total Expenses	18,397,822		2,526,411		82,851,984		11,483,250	
Operating Income	10,504,901	36%	944,152	27%	29,204,990	26%	5,312,791	32%
Depreciation	461,969	2%	60,420	2%	2,379,106	2%	301,643	2%
P.B.I.T.	10,042,931	35%	883,732	25%	26,825,883	24%	5,011,148	30%
Interest Expense	665,626	2%	37,780	1%	2,606,766	2%	361,048	2%
Adjustments - Gain (Loss)	45,836	0%	-39,177	-1%	1,216,735	1%	50,924	0%
Pre-tax Profit	9,423,141	33%	806,776	23%	25,435,852	23%	4,701,024	28%
Canadian Programming Expenses								
Acquisition of Rights	6,068,226	62%	326,293	50%	21,201,329	38%	3,149,080	50%
Script & Concept	142,082	1%	8,035	1%	0	0%	48,660	1%
Filler Programming + Program Production	3,555,747	36%	304,043	47%	35,035,176	62%	3,071,459	49%
Investment in Programming	24,124	0%	10,852	2%	0	0%	14,362	0%
Total Canadian Programming	9,790,179		649,223		56,236,505		6,283,561	
Canadian Programming / Revenue (%)	33.9		18.7		50.2		37.4	
Subscribers	4,355,312		1,901,013		6,694,093		3,913,268	
Average Weekly Reach Network Count	41		62		6		109	
Average Weekly Reach (%)	10.7		2.2		15.9		6.1	

Source: NERA Economic Consulting, based on CRTC and CMDC data (CMDC, Media Digest, 2013/2014 (2014) at 44-49).
Note: Canadian Programming/Revenue (%) data are totals.

The data portrayed in Table 2 illustrates several important characteristics of specialty service performance which are relevant to assessing the impact of an unbundling mandate. First, advertising accounts for approximately 40 percent of all specialty service revenue, and for 50 percent of total revenue for Category A services. Since advertising revenue is a function of distribution, the effect of an unbundling mandate would be to reduce this source of revenue, shifting more of the burden for paying for content and distribution onto subscribers. Second, sales and promotion expenses account for only eight percent of total expenditures. Because mandatory unbundling would increase consumer search costs and force services to market themselves directly to subscribers, sales and promotion expenses would be likely to increase significantly.

B. The Impact of Technological and Market Trends

The growth of the Internet is having at least two significant effects on video distribution markets which are relevant to assessing mandated unbundling. First, as is widely recognized, the growth of online media of all kinds – including video platforms such as YouTube – is providing

advertisers with alternative outlets and placing downward pressure on traditional television advertising revenues. As the Commission reports, advertising is declining as a proportion of both conventional and specialty TV revenues, falling from 62 percent of revenues in 2008 to 53 percent in 2012.[42]

The Commission has also noted that technological changes have led to greater consumer choice, and that this trend is likely to continue in the future. Indeed, both the *April 24 Report* and the *April 24 Notice* discuss the transformational changes already underway in digital video markets, and suggest that regulatory changes are necessary in order to accommodate these changes.[43] While it is no doubt true that regulations need to adjust to the changing marketplace, what the Commission has not done is provide a rationale for mandating outcomes – increasing consumer choices for video packaging – that are already being produced in the market.

The trend towards increasing choice in BDU programming began with the move from analog to digital cable systems starting in the mid-2000s, which reduced significantly the transactions costs of providing pick-and-pay functionality.[44] More recently, Internet-based services have begun providing consumers with choices ranging from real-time viewing of various programs (e.g., major sports events) to the ability to choose from an extensive catalogue of archived programs provided over both independent and vertically integrated platforms.

The Commission has followed these developments closely for many years. In 2008, for example, it noted that "The Canadian broadcasting system, like other broadcasting systems throughout the world, is currently adapting to new, multi-platform, digital technologies. While traditional linear television channels still command the largest audiences and revenues, there is no denying the growing impact of VOD and new media platforms."[45] Three years later, based on its OTT fact-finding exercise, the Commission noted evidence that:

> [M]ost Canadians now have the opportunity to consume content when, where and how they want. Canadians are using devices such as PCs, tablets, games consoles, Internet-connected set-top boxes and/or smartphones to access audio-visual and audio programming in a way increasingly akin to a traditional television or radio experience.[46]

The *April 24 Report* makes a similar point: "Due to recent technological changes, many consumers are now using a range of platforms and devices that allow them to have more control

---

[42] See *2013 Monitoring Report* at 87.

[43] See *April 24 Notice at* ¶26; see also CRTC, *Maximizing the Ability of Canadian Consumers to Subscribe to Discretionary Services on a Service-By-Service Basis* (April 24, 2014) at 4 (hereafter *April 24 Report*).

[44] See *FCC 2004 Report* at 12-14. By 2012, approximately 80 percent of Canadian BDU subscribers were receiving digital services. See *2013 Monitoring Report* at 114.

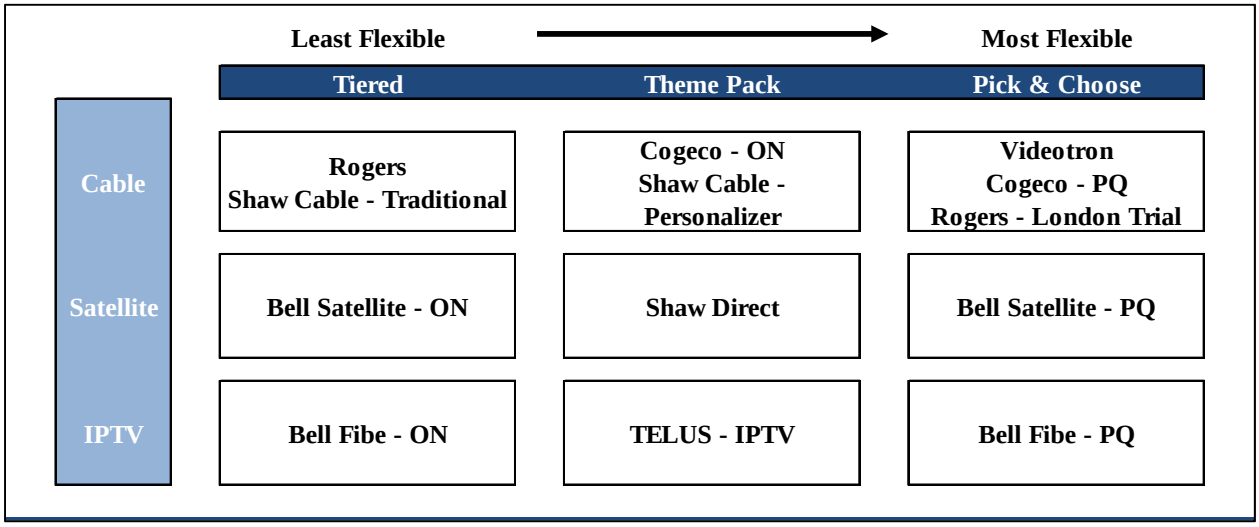
[45] See *CRTC Public Notice 2008-100* at ¶27.

[46] See CRTC, *Results of Fact-Finding Exercise on the Over-the-Top Programming Services* (October 2011) at 4 (available at http://www.crtc.gc.ca/eng/publications/reports/rp1110.htm).

over the audiovisual content they watch, thus making for a more customized viewing experience."[47]

While the extent to which OTT services function as direct substitutes for BDU services, as opposed to complements, remains unclear,[48] there is little question that they are providing consumers with additional choices and encouraging BDUs to innovate, including offering increased programming choices. A recent report from Credit Suisse, for example, notes that Danish video distributor Yousee recently launched a pick-and-pay offering "to protect against increasingly popular over-the-top services from Netflix and HBO,"[49] and found that "Given that traditional TV subscribers are starting to decline, providing greater packaging flexibility is likely in the industry's best long-term interest."[50] As shown in Figure 5, Canadian BDUs are offering increasingly diverse choices of programming.

FIGURE 5:
PACKAGES CURRENTLY AVAILABLE FROM CANADIAN BDUs



Source: Credit Suisse.

While online television remains a relatively small share of overall viewing, it is generally agreed that its share will continue to grow. Ryland and Sherman, for example, conclude that "As the speed and quality of online video transmission continues to rise, as broadband diffusion grows, as more efficient and portable media players continue to proliferate, and as the interaction

[47] See *April 24 Report* at 4.
[48] See FCC, *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, MB Docket No. 12-203 (July 22, 2013) at ¶132.
[49] See Colin Moore and Robert Peters, "Cable and Broadcasting: Unbundling the Risks of Cable Unbundling," Credit Suisse (November 1, 2013) at 11 (hereafter *Credit Suisse*).
[50] See *Credit Suisse* at 2.

between consumers and video content providers becomes more seamless, the economic viability of the online video entertainment industry seems bound to improve."[51]

IV. Assessing the Impact of "Pick-and-Pay"

In the *April 24 Notice*, the CRTC indicates that it is considering adopting requirements that BDUs offer a small basic service comprised of local conventional Canadian television stations, 9(1)(*h*) services, and certain educational and community services and that all other services be offered on both a pick-and-pay and build-your-own-package basis. It also proposes to allow BDUs to continue to offer bundles as in the current marketplace.[52] The Commission's view appears to be that it can essentially have the best of all worlds – allowing consumers who wish to "pick-and-pay" to do so, while still achieving the efficiency benefits of bundling and the rich and diverse content choices it promotes.[53]

For reasons explained below, this is unlikely to be the case. Rather, the main effects of the proposed changes are likely to be: (a) a smaller and less efficient video programming and distribution marketplace; (b) a reduction in programming choice, at least with respect to Canadian programming; and, (c) for many and perhaps most consumers, higher overall costs.

A. Policy Options

The *April 24 Notice* contemplates sweeping changes in the way the CRTC regulates Canadian television markets. In addition to the proposed pick-and-pay and build-your-own-package mandates, the Commission indicates it is considering removing the current "must carry" obligation as it applies to Category A services, as well as making significant changes to the way it regulates non-Canadian programming services, eliminating the requirement that consumers receive a preponderance of Canadian programming, modifying its rules regarding simultaneous substitution, and making significant changes in the ways in which it promotes various forms of Canadian and local programming. While the analysis here focuses on the contemplated changes most closely associated with mandatory unbundling, the sweeping nature of the proposed changes (described by Credit Suisse as posing "historic regulatory tradeoffs")[54] makes it difficult to predict accurately the net effects with any degree of assurance. In this sense, the only certain effect of such a sweeping reform would be tremendous regulatory uncertainty.

---

[51] See Ryland Sherman and David Waterman, "Technology and Competition in U.S. Television: Online vs. Offline" (September 21, 2012). A 2014 survey by nScreenMedia indicates that in the U.S., more households (80 percent) now watch at least some free Internet videos than watch pay-TV. See Colin Dixon, "View My Video – Consumer Digital Media Consumption," nScreenMedia (Q2 2014) (available at http://nscreenmedia.us6.list-manage1.com/subscribe?u=69bd8ae9c0&id=98cbb9c8c6, registration required).

[52] See *April 24 Report* at 4.

[53] See *April 24 Report* at 6 ("The proposed approach, which would offer Canadians choice, would help support the viability of different elements of the system, therefore ensuring that a wide range of programming is available, including niche programming targeted to smaller audiences.").

[54] See *Credit Suisse* at 5.

Even taken in isolation, the regulatory implications of the proposed changes in mandatory carriage rules are quite complex, as suggested in the 12 specific questions put forward in the *April 24 Notice*.[55] Would some BDUs or DTH services be regulated differently from others? Would the Commission need to regulate affiliation agreements (e.g., with respect to penetration based pricing)? Would it need to regulate the size of the packages consumers could choose? These questions provide a window into the complex regulatory regime that would likely be needed to implement the proposed system. In an increasingly dynamic environment, it is at best questionable whether such a regime could be sufficiently adaptable to rapid changes in the marketplace. Thus, in addition to the direct economic effects of the proposed mandates, which are described immediately below, the CRTC should consider the desirability of imposing a complex new regulatory regime on a rapidly changing marketplace.

Even if the CRTC chooses to move ahead with some form of mandate, it should do so in a way that minimizes regulatory delay, inflexibility and uncertainty. For example, a simple "must-offer" requirement of the sort proposed by Bell Canada could be implemented relatively easily, and would preserve the flexibility for BDUs and programmers to adjust their offerings to reflect ongoing changes in the market. A mandate that specified tiers or constrained pricing, on the other hand, would necessarily involve a more detailed and cumbersome regulatory regime that would impose inevitable costs, burdens and delays.

B. The Economic Effects of Mandated Pick-and-Pay

The empirical studies and other evidence summarized above show that the direct effects of a pick-and-pay/build-your-own-package regime would include higher marketing costs (since many services would no longer be automatically delivered to consumers for free sampling) and lower levels of penetration (since at least some consumers would choose smaller channel lineups). Lower viewership would lead to lower advertising revenues, while marketing and promotion costs would increase. Thus, as the Commission suggests, "Some channels might not survive in an environment marked by greater subscriber choice, leading to the loss of services that some Canadians enjoy."[56]

Table 3 below summarizes the results from the three most comprehensive quantitative assessments of the effects of mandatory unbundling, Booz Allen, Byzalov, and C&Y, with respect to the impact of mandatory unbundling on the penetration (i.e., subscribership) and viewership (i.e., reach) of unbundled services. The studies use different methodologies and data sets, and each assesses the effects of different proposals under different sets of assumptions, thus producing a range of estimates. As the table indicates, however, the studies are in broad agreement on both the direction and, within reasonable bounds, the magnitude of the estimated effects.

---

[55] See *April 24 Notice* at ¶49.
[56] See *April 24 Report* at 5.

TABLE 3:
ESTIMATED EFFECTS OF MANDATORY UNBUNDLING
ON PENETRATION AND VIEWERSHIP

Study	Reduction in Penetration			Reduction in Viewership		
	Low	Mid-Point	High	Low	Mid-Point	High
Booz Allen	-35%	-56%	-76%	-13%	-18%	-23%
Byzalov	-33%	-41%	-48%	9%	-1%	-11%
Crawford and Yurukoglu	-19%	-40%	-60%	-1%	-15%	-29%
Overall Average	-29%	-45%	-61%	-2%	-11%	-21%

Source: Booz Allen, Byzalov, Crawford and Yurukoglu.

All three studies estimate that mandatory unbundling will significantly reduce penetration of discretionary services (i.e., those not included in a basic package). The smallest effect estimated by any of the three studies is a decline in penetration of 19 percent (C&Y) while the largest is 76 percent (Booz Allen). When midpoint estimates (the average of the high and low estimate) from the various scenarios in each study are examined, the range of estimates narrows, with Byzalov estimating a decline in subscribership of 41 percent and Booz Allen a decline of 56 percent. Taking an average of averages (i.e., calculating the average of the three mid-point estimates) yields an estimated decline in penetration of 45 percent.[57]

The three studies are also in broad agreement on the impact of unbundling on viewership. As shown in the right-hand side of the table, the range of estimates is somewhat wider, with Byzalov actually predicting a slight increase in viewership in his "best case" scenarios and C&Y predicting declines of up to 29 percent. The average of the midpoint predictions across all three studies is that viewership would decline by 11 percent.

These estimates can be used to estimate the impact of unbundling on certain key financial metrics of Canadian specialty carriers.

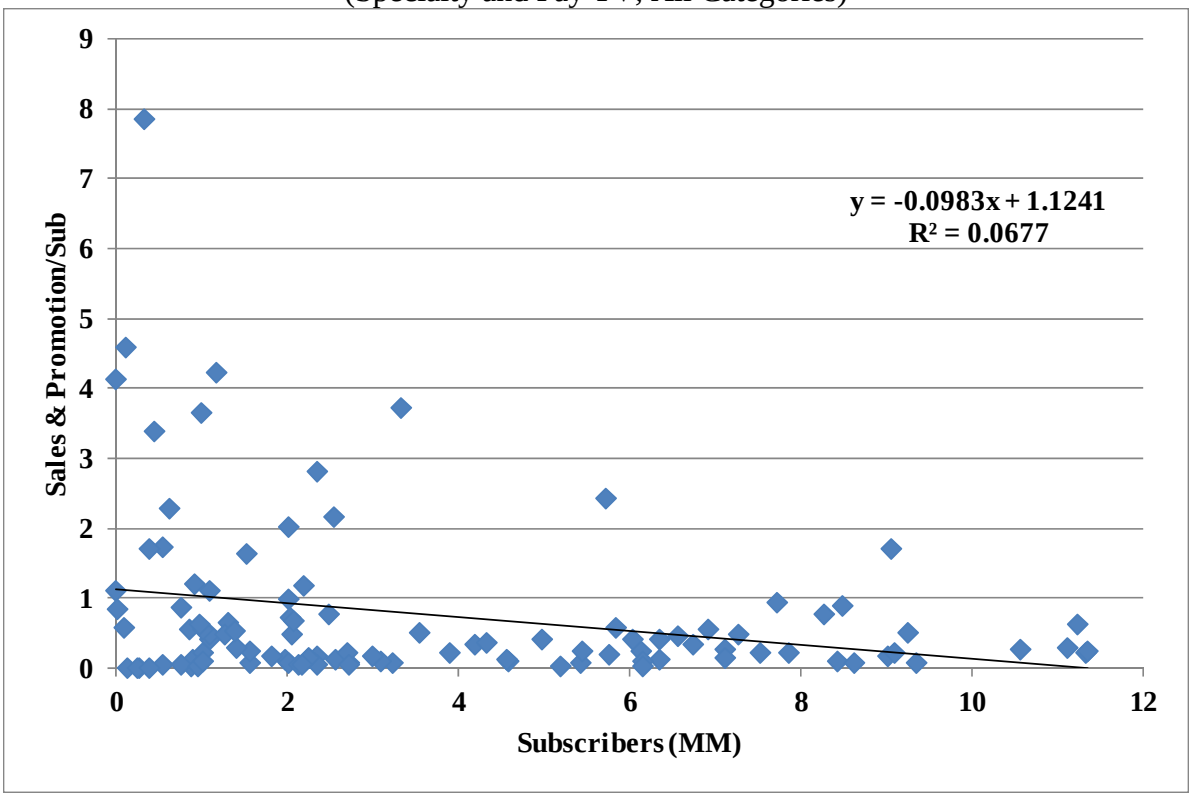
Using the financial and other data summarized in Table 3 above, it is possible to estimate the relationship between two pairs of variables: (1) penetration vs. sales and promotion expenses; and, (2) viewership vs. advertising revenues per subscriber. The first relationship captures the fact that services which are available to fewer customers do not benefit as much as more widely distributed services from "channel surfing," and must therefore spend more (other things equal) on sales and promotion. The second relationship, between viewership and advertising revenue per subscriber, captures the fact that more widely viewed networks are generally able to demand higher advertising rates than less widely viewed services.

Figure 6 below depicts the relationship between per-subscriber spending on sales and promotion expenses and penetration (as measured by the number of subscribers) for the Canadian specialty

[57] Notably, these estimates are broadly consistent with Bell Media's own recent experience with "themed tiers" and "build-your-own-package" offerings by TELUS and Videotron. See Figures 2 to 4 in Bell's Comments.

and pay TV services for which the CRTC reported this data for 2013. As expected, the data show that per subscriber spending on sales and promotion is inversely correlated with availability: services with fewer subscribers spend more per subscriber on sales and promotion than larger services, indicating higher customer acquisition costs. The implication of this finding is simple: A pick-and-pay mandate that resulted in lower subscribership would, on average, raise sales and promotion costs for Canadian services. The coefficient on the regression equation shown in the figure (i.e., the slope of the trend line) of -0.0983 indicates that, for every million subscribers to which a service is available, the amount spent on sales and promotion per subscriber declines by $0.098 per year. Average per subscriber spending on sales and promotion across all services is $0.76; thus, the loss of one million subscribers would raise per subscriber expenses by 12.8 percent (=0.098/0.76).

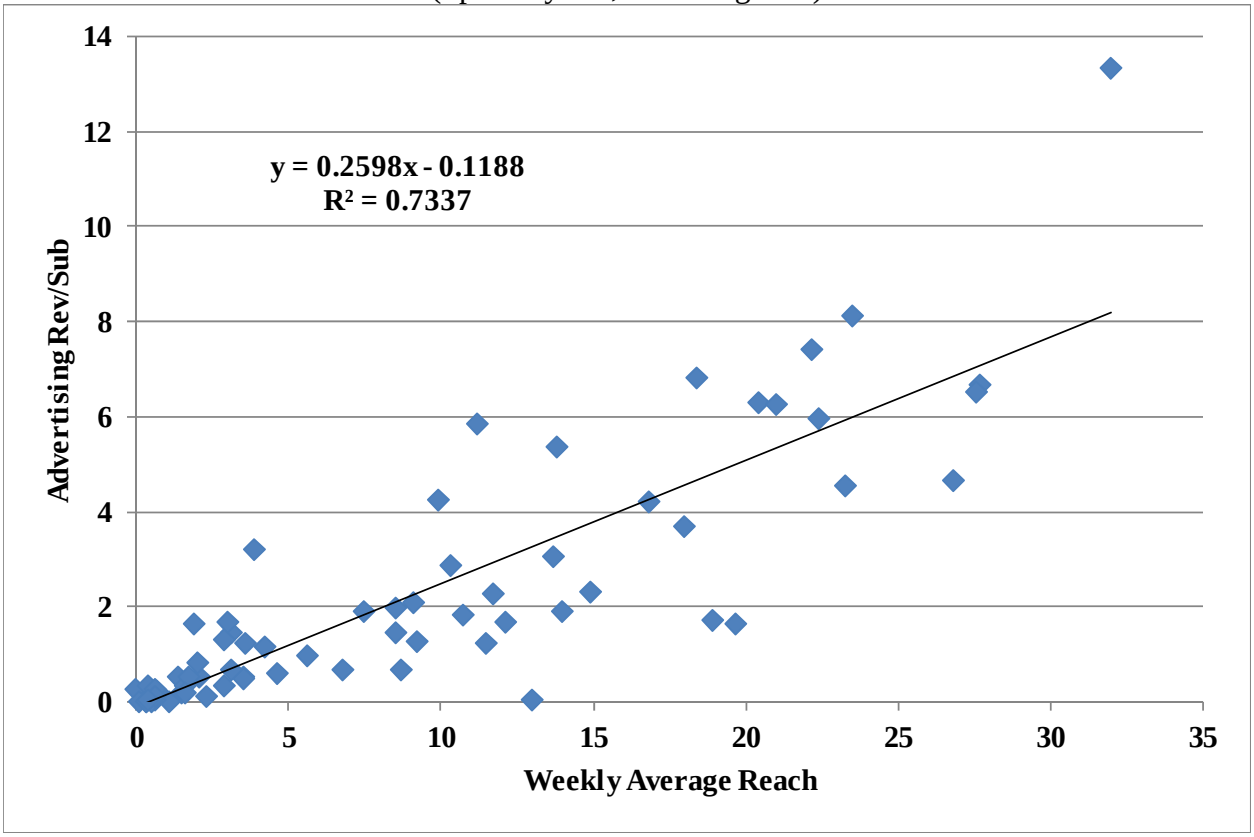
FIGURE 6:
ECONOMIES OF SCALE IN SALES AND PROMOTION EXPENSES (2013)
(Specialty and Pay TV, All Categories)



Source: NERA Economic Consulting, based on CRTC data.

The relationship between a specialty service's weekly reach,[58] on the one hand, and its advertising revenue per subscriber, on the other hand, is shown in Figure 7. If more widely viewed services are more valuable to advertisers, one would expect this relationship to be positive – that is, services with greater reach would earn higher advertising rates per subscriber than less viewed services. As the figure shows, the data supports this hypothesis: There is a strong positive correlation between advertising revenue per subscriber and reach.

FIGURE 7:
ECONOMIES OF SCALE IN ADVERTISING REVENUES (2013)
(Specialty TV, All Categories)



Source: NERA Economic Consulting, based on CRTC data.

Figure 7 confirms that as the reach of Canadian specialty services declines under mandated unbundling (again, for all services except those included in the mandatory bundle), advertising revenues will decline as well, and by a significant amount. The coefficient of 0.26 in the regression equation shown in the figure means that for each one percentage point decline in a

[58] Reach is defined as the proportion of households that view a channel at least once during a period; "average weekly reach" is the average number of households that tune to a channel at least once during a given week, averaged over a number of weeks. Because pay TV services are prohibited from carrying advertising, they are excluded from this analysis.)

service's weekly reach, annual advertising revenues per subscriber decline by $0.26, or about eight percent of advertising revenues, which average $3.20 across all services.

Table 4 below shows the results when the estimated effects of mandatory unbundling from prior studies are applied to the regression coefficients reported immediately above. The changes in penetration and viewership as estimated by the studies are multiplied with service averages for penetration and viewership respectively across all service types. The baseline changes in the two metrics are then multiplied by the regression coefficients to calculate the impact on per subscriber sales and promotion and advertising revenue per sub. First, as shown in the left-hand panel, the declines in penetration estimated by the Booz Allen, Byzalov and C&Y translate into an increase in sales and promotion expenses per subscriber for the average Canadian specialty service of between 14 percent and 29 percent.[59]

TABLE 4:
IMPACT OF MANDATORY UNBUNDLING ON PER SUBSCRIBER SALES AND PROMOTION EXPENSES AND ADVERTISING REVENUES

Study	Increase in Sales and Promo/Sub			Decrease in Advertising Rev/Sub		
	Low	Mid-Point	High	Low	Mid-Point	High
Booz Allen	17%	26%	36%	-9%	-13%	-17%
Byzalov	16%	19%	23%	6%	-1%	-8%
Crawford and Yurukoglu	9%	19%	28%	0%	-10%	-21%
Overall Average	14%	21%	29%	-1%	-8%	-15%

The right-hand panel of Table 4 shows the estimated effects of declining viewership from mandated unbundling on advertising revenues per subscriber, indicating a decline of between one percent and 15 percent. Combining these per subscriber estimates with the estimated decline in subscribers (between 29 percent and 61 percent, as shown in Table 3 above) yields an estimated decline in actual advertising revenue of between 29 percent and 67 percent,[60] or – since advertising accounts for 40 percent of all specialty service revenue – between 12 and 27 percent of total revenues. Put differently, specialty service revenues would decline by between $377 million and $871 million compared with their 2013 level of $1.3 billion.

To reiterate, the studies upon which these estimates are based utilize a variety of different approaches and assumptions, and examine a variety of different forms of unbundling mandates; the resulting estimates should be regarded as indicative of a range of possible effects rather than as a precise estimate. At the same time, it should be noted that, despite the differences among the studies, they all lead to the same directional conclusions and produce a range of estimates which,

[59] Compared with prior estimates, these figures are quite conservative. Booz Allen estimates that network marketing expenses would more than quadruple, from 2-6 percent of revenues to 20-30 percent. See Booz Allen at 35.

[60] The 67 percent decline in advertising revenues is the combined effect of a 61 percent decline in subscribers and a 15 percent decline in revenues/subscriber.

though wide, represents a reasonable upper and lower bound of the likely effects of unbundling. They also provide the basis for reaching qualitative, if not quantitative, conclusions about the further effects of the CRTC's proposed policies.

First, as the CRTC appears to recognize, mandatory unbundling will harm the profitability of Canadian specialty services due to higher sales and promotional expenses and significantly lower advertising revenues. Less profitable services will no longer be economically viable and hence will exit the market, leading to reduced choice of Canadian programming for Canadian viewers. The precise distributional effects across services are difficult to predict, but it seems likely that smaller services will be most heavily affected due to economies of scale and scope. For example, in the U.S. market, it has been estimated that an additional one million subscribers increases a cable network's probability of survival in a given year by 17 percent.[61]

Consumer choice will also be affected by higher costs of entry, as new services will need to devote significant resources (fixed and sunk costs) to initial marketing efforts. As Credit Suisse explained, "We'd expect it to become more difficult to launch channels, given it would become harder for consumers to discover the content."[62]

The decline in industry revenues and in the number of specialty services will, at least initially, lead to a reduction in the amount of Canadian programming being produced. The *April 24 Notice* indicates that the Commission is considering a variety of countervailing measures. The Commission recognizes that its proposals would likely result in the loss of economies of scale and scope in the programming sector:

> The potential loss of discretionary programming services under the proposed model could have an impact on production. The loss of programming services would affect the ability of affiliated programming services to amortize programming costs across multiple services and consequently their ability to fund new programming.[63]

One means of recapturing lost economies of scale and scope in video production would be to permit increased consolidation in the video production sector, though the Commission would

---

[61] See Keith S. Brown, "How Many Viewers Does a Cable Network Need? A Survival Analysis of Cable Networks," *Applied Economics* (2006) (available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=916786). See also *Credit Suisse* at 13 ("In some of the existing pick-a-pack offerings, customers can choose 15-30 channels among 130 options meaning there will inevitably be winners and losers at the broadcast level. Popular channels such as TSN may always carry sufficient pricing power, but the mid-to-niche channels may have greater difficulties recouping subscriber and advertiser revenues….Some programming channels may need to be cancelled entirely, with broadcast efforts focused on building more select, stronger brands.")

[62] See *Credit Suisse* at 13.

[63] See *April 24 Report* at 6.

need to weigh the benefits of such consolidation against its objectives with respect to programming diversity.[64]

Another factor – perhaps the most significant unknown factor in assessing the overall effect of the proposals – is the reaction of U.S. services to a pick-and-pay mandate, and the potential effect of a reduction in foreign programming (or a move to OTT availability only) on the finances of the Canadian video industry and its ability to finance expenditures on Canadian programming.[65] Given the uncertainties involved, any attempt to estimate the actual economic effects of the proposals associated with foreign programming would be premature.

What would be the ultimate effect of all of these changes on consumers?

To begin, the existing research does not yield meaningful quantitative estimates of the impact of an unbundling mandate on prices, so long as price is defined as monthly spend on BDU video services. Some consumers – those who chose to purchase only a few services on a pick-and-pay basis – would spend less per month (though more per service) than under the status quo; and, those who placed zero or very low values on the services to which they no longer had access would benefit from the new regime. On the other hand, higher prices per service would cause other consumers to pay more per month than previously, even while receiving fewer services.

The biggest losers likely would be consumers for whom channels they previously valued highly had ceased to exist and were no longer available at any price. Needham Research suggests that the loss of programming diversity would be a cost felt by a large proportion of subscribers:

> Losing channels destroys consumer value as channel choices fall. If smaller channels went out of business in an a la carte world, this would "cost" households value if these niche channels were one of their 18 favorites. In fact, EVERY household we surveyed would lose 3-5 "passion channels" because those channels would no longer be available in an unbundled world.[66]

Returning to the existing literature as summarized above, the weight of the evidence suggests that the net consumer benefits from mandatory unbundling would be at most very small, and then only under best-case assumptions. In the short term, higher per-service prices are likely to wipe

---

[64] See CRTC, *Broadcasting Decision CRTC 2013-310 Astral broadcasting undertakings – Change of effective control* (June 27, 2013) at ¶25 ("The Commission is aware of the benefits of consolidation and scale as these can facilitate the creation of diverse, relevant high-quality Canadian programming and its distribution through conventional and digital media distribution channels.").

[65] See Peter Miller, *Developments in the Canadian Program Rights Market*, CRTC (March 31, 2011) at 3 ("Whether gradual or sudden, incremental or all encompassing, reductions in the ability of Canadian broadcasters to secure Canadian multi-platform rights on a cost effective basis would have a direct effect on their capacity to support Canadian programming – especially in English Canada – as profits from foreign programming cross-subsidize Canadian programming (which at best, tends to break even).").

[66] See Martin at 5.

out the gains from the ability to purchase fewer services, leaving most subscribers paying about the same price but with access to less content. In the longer run, as advertising revenues decline and programming choices contract, most consumers are likely to be worse off than before. Given that a majority of Canadians report being satisfied with their current choices for channels, and taking into account the inherent riskiness of the proposed changes, it is difficult to conclude that the expected benefits of the proposed changes exceed the expected costs.[67]

V. Conclusion

Economic theory predicts that the bundling of video content is economically efficient and likely to make consumers better off, and the available empirical research confirms these predictions. Bundling allows the fixed costs of producing and distributing video content to be spread efficiently among consumers, resulting in increased output and greater consumer choice. Mandatory unbundling in any form can safely be predicted to result in lower output, a shifting of costs from advertisers to consumers, higher consumer search costs (and increased sales and promotion expenses for programmers), and less consumer choice. While a subset of consumers may benefit, the overall effects on consumer welfare are likely to be negative. The extent of harm caused by mandatory unbundling is directly related to the nature of the mandate imposed, with more prescriptive mandates having the potential to impose significantly higher costs, especially over the medium-to-long term.

[67] See *Harris/Decima Report.*

NERA
ECONOMIC CONSULTING

Attachment A

Dr. Jeffrey A. Eisenach

Senior Vice President
Co-Chair, Communications, Media and Internet Practice

Education

PhD in economics, University of Virginia
BA in economics, Claremont McKenna College

Experience

Dr. Eisenach is a Senior Vice President and Co-Chair of the NERA's Communications, Media and Internet Practice. He is also an Adjunct Professor at George Mason University Law School, where he teaches Regulated Industries, and a Visiting Scholar at the American Enterprise Institute, where he directs the institutions' Center for Internet, Communications, and Technology Policy. Previously, Dr. Eisenach served in senior policy positions at the US Federal Trade Commission and the White House Office of Management and Budget, and on the faculties of Harvard University's Kennedy School of Government and Virginia Polytechnic Institute and State University.

Dr. Eisenach's consulting practice focuses on economic analysis of competition, regulatory, and consumer protection issues in the communications and media sectors. He has submitted expert reports and testified in litigation matters, as well as in regulatory proceedings before the Federal Communications Commission, the Federal Trade Commission, several state public utility commissions, and regulatory bodies in Australia, Canada, and South America. He has also testified before the US Congress on multiple occasions.

Dr. Eisenach writes extensively on a wide range of issues, including industrial organization, communications policy and the Internet, government regulations, labor economics, and public finance. He is the author or co-author of a number of books, including *The Digital Economy Fact Book*, *The Telecom Revolution: An American Opportunity*, and *America's Fiscal Future: Controlling the Federal Deficit in the 1990s*. In addition, he has edited or co-edited five books, including *Communications Deregulation and FCC Reform: What Comes Next?* and *Competition, Innovation and the Microsoft Monopoly: Antitrust in the Digital Marketplace*. His articles have appeared in a range of scholarly journals as well as in such popular outlets as *Forbes*, *Investors Business Daily*, *The Wall Street Journal*, *The Washington Post*, and *The Washington Times*.

Prior to joining NERA, Dr. Eisenach was a managing director and principal at Navigant Economics, and before that he served as Chairman of Empiris LLC, Criterion Economics, and CapAnalysis, LLC. Among his other previous affiliations, Dr. Eisenach has served as President and Senior Fellow at The Progress & Freedom Foundation; as a scholar at the American Enterprise Institute, the Heritage Foundation, and the Hudson Institute; as a consultant to the US Sentencing Commission (on corporate sentencing guidelines); and as a member of the 1980-81 Reagan-Bush Transition Team on the Federal Trade Commission, the 2000-2001 Bush-Cheney

Transition Team on the Federal Communications Commission, the Virginia Governor's Commission on E-Communities, and the Virginia Attorney General's Task Force on Identity Theft.

Dr. Eisenach received his PhD in economics from the University of Virginia and his BA in economics from Claremont McKenna College.

Representative Communications and Media Engagements

- 2006 On behalf of the U.S. Department of Justice, testified in the U.S. District Court for the Eastern District of Pennsylvania in *ACLU v. Gonzalez*, the landmark litigation on the constitutionality of the Child Online Protection Act, on the market for content protection software.

- 2012 On behalf of Bell Media (Canada), submitted an expert affidavit before the Supreme Court of Canada, and an expert report before the Canadian Radio-Television and Telecommunications Commission, on adoption of a proposed “fee for carriage” regime for broadcast content provided to content distributors.

- 2012 On behalf of Sound Exchange (U.S.), testified before the Subcommittee on Intellectual Property, Competition and the Internet, Committee on the Judiciary, U.S. House of Representatives, on the digital sound performance right.

- 2008 On behalf of Telstra (Australia), presented an expert report before the Federal Court of Australia on competition in the market for video content distribution.

- 2008 On behalf of the Walt Disney Company (U.S.), presented an expert declaration before the U.S. Federal Communications Commission on wholesale unbundling regulation.

NERA
ECONOMIC CONSULTING

NERA Economic Consulting
1166 Avenue of the Americas
New York, New York 10036
Tel: 1 (212) 345-3000 Fax: 1 (212) 345-4650
www.nera.com