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Modelling a new broadcasting distribution system financial contribution framework for Canadian audiovisual content

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Prepared for the Canadian Media Producers Association (CMPA) in partnership with: Alliance of Canadian Cinema, Television and Radio Artists (ACTRA); Association québécoise de la production médiatique (AQPM); and Directors Guild of Canada (DGC).

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Executive summary

Current regulations in the Canadian broadcasting system require Broadcasting Distribution Undertakings (BDUs) to contribute a fixed share of revenue to the creation of Canadian programming. As part of a digital shift in Canadian media consumption, media content is increasingly being distributed over Internet and wireless network platforms. These service platforms are not currently required to contribute to Canadian programming despite becoming significant elements of Canada's broadcasting system.

As revenues in the BDU sector are now in decline and BDUs are the sole funding contributor within the existing framework, this decline is having a direct negative impact on the level of private-sector funding contributions available to support the production of Canadian content. Given its overarching objective of supporting the vitality of Canada's production sector, the CMPA is seeking to develop a platform agnostic approach to redesigning the existing contribution framework.

In this context, PricewaterhouseCoopers, LLP (PwC, we or us) has been commissioned by the CMPA to develop model options for a new financial contribution framework at the distribution level of the industry that reflects current industry dynamics and is consistent with the CMPA's objectives. In developing these models, PwC has been guided by certain principles provided to us by the CMPA (the Guiding Principles).

In this context, our contribution framework models were developed with reference to the Guiding Principles set by the CMPA, as follows:

1. **Comprehensiveness**: models should broaden the contribution base to include new domestic content distribution industry segments provided through retail Wireless Service Providers (WSPs) and Internet Service Providers (ISPs). We refer to BDUs and the relevant media content distribution portions of WSPs and ISPs collectively as "Funding Segments";

2. **Minimum funding level:** the future funding levels achieved are, at a minimum, equal to the historical levels achieved in the existing framework in order to continue supporting Canadian content production in a sustainable manner. Based on an assessment of historic funding levels, a minimum target of funding (corresponding to the historical peak funding year) was set for the purpose of this report;

3. **Dynamism:** models allow for adjustments in market shares over time such that cumulative funding level and growth remains in line with the overall revenue level and growth of the Funding Segments;

4. **Fairness**: models should reflect the contribution shares in an equitable manner across Funding Segments;

5. **Minimum growth impediment:** a Funding Segments' contribution share will be determined such that it does not lead to an increased obligation for the distribution sector as a whole;

6. **Pro-SME (small and medium enterprises):** consideration should be given to the viability of smaller companies; and

7. **Minimum consumer impact:** models should minimize as much as possible any direct cost increases to Canadian consumers, in particular low income households.

In developing new model options in accordance with the above Guiding Principles, we broadened the revenue base of the existing contribution framework to include revenue from the Residential Internet and Wireless data segments, in addition to the BDU revenue currently factored into the existing contribution framework.

Using historical data, 2013-14 was identified as the peak funding contribution year. Consistent with Guiding Principle 2, the 2013-14 funding level, was therefore set as the minimum magnitude of contribution funds (annual target) to be achieved during all forecast period under a new contribution framework. We have set these annual

targets using two potential extreme possibilities, which represent our lower bound (minimum target/Model Type L) and upper bound (maximum target/Model Type U) funding targets, as follows:

- **Inflation-based targets - lower bound/minimum targets (Model Type L)**: Increases the annual funding target to account for the increases in cost of living (i.e. the inflation rate).

- **Segment growth-based targets - upper bound/maximum targets (Model Type U):** Increases the annual funding target in line with the nominal growth rate of the three Funding Segments. We note that the nominal growth rate is the sum of real growth (all growth excluding inflation) and inflation growth.

To this end, we developed the following three allocation schemes to be incorporated into each of the above two model types, creating a total of six models (i.e. 2x3):

1. **Scheme 1: Gap reallocation** - BDUs contribute 5% of their revenues[1]. Under this scheme, the gap from the target funding level is met by contributions from the other Funding Segments

2. **Scheme 2: Gradual reallocation** - An intermediary scheme between Scheme 1 and Scheme 3 with Funding Segment contributions commencing at Scheme 1 levels before gradually achieving Scheme 3 contribution levels

3. **Scheme 3: Market share-based reallocation** - Funding contributions are allocated between the three Funding Segments in proportion to their relative market share of revenue

Based on the above two funding model types and three allocation schemes, the following six models were developed as part of this study

		Funding target:	
		Inflation-based (Model Type L)	**Segment growth-based (Model Type U)**
Allocation Scheme	Scheme 1	Model Type L, Scheme 1	Model Type U, Scheme 1
	Scheme 2	Model Type L, Scheme 2	Model Type U, Scheme 2
	Scheme 3	Model Type L, Scheme 3	Model Type U, Scheme 3

By design, each model adheres to the first three Guiding Principles. Models options do not adhere to all the remaining Guiding Principles and there are a number of trade-offs and potential adaptations to particular models to be considered when assessing their respective adherence to Guiding Principles 4-7.

[1] Including the inflationary component.

1. Introduction

1.1. Study background

The Canadian Media Producers Association (CMPA) is Canada's national trade association for independent English-language media producers. The CMPA's membership base includes hundreds of companies engaged in the development, production and distribution of English-language content made for television, cinema and digital media. The CMPA works on behalf of these members to ensure a bright future for domestic media production and Canadian content. In doing so, the CMPA plays a key role in promoting the value of the industry and shaping federal government policy on critical industry issues including broadcasting, funding, copyright, taxation, trade and industrial relations.

Current regulations in the Canadian broadcasting system require Broadcasting Distribution Undertakings ("BDUs") to contribute to the creation of Canadian programming. These financial contributions support the creation of Canadian content and help further the objectives outlined in the *Broadcasting Act (1991),* which states that "each element of the broadcasting system shall contribute in an appropriate manner to the creation and presentation of Canadian programming."[2] Given industry dynamics at the time the *Broadcasting Act (1991)* was drafted, the regulatory framework was centred on contributions solely from the legacy television system. The existing financial contribution framework requires traditional television distributors (i.e. BDUs) to contribute 5% of their previous year's revenues towards Canadian programming, a portion of which (about 50%) is directed towards the Canada Media Fund (CMF).

As part of a digital shift in Canadian media consumption, media content is increasingly being distributed over Internet and wireless network platforms. These service platforms are not currently required to contribute to Canadian programming despite becoming increasingly significant elements of Canada's broadcasting system. Revenues in the BDU sector are now on a declining trajectory, which, given the existing framework's sole focus on BDU contributions, is having a direct negative impact on the level of private-sector funding contributions available to support the production of Canadian content.

In April 2018 the Canadian Radio-television and Telecommunications Commission (CRTC) released a study titled *Harnessing Change: The Future of Programming Distribution in Canada,* which observed a decline in the share of public funding on culture and broadcasting from 0.32% of the GDP in 1992 to 0.16% in 2016. Given this decline, the CRTC's study recommends a redesign of the existing contribution framework in order to continue supporting Canadian content production in a sustainable manner.[3] As of June 2018, in acknowledgment of the impacts of the digital shift in the manner in which media is consumed in Canada, the Government of Canada launched a review of the Broadcasting Act and the Telecommunication Act. This review will examine issues including telecommunications and content creation in the digital age, and mechanisms to strengthen the future of Canadian media and Canadian content creation.

Given its overarching objective of supporting the vitality of the industry, the CMPA is seeking to develop a content-centric / platform agnostic approach to redesigning the existing contribution framework.

1.2. Study objective

PricewaterhouseCoopers, LLP (PwC, we or us) has been commissioned by the CMPA to develop possible model options for a new financial contribution framework at the distribution level of the industry that reflects current industry dynamics and is consistent with the CMPA's objectives.

[2] *Broadcasting Act (1991)* Paragraph 3(1)(e)
[3] Harnessing Change: The Future of Programming Distribution in Canada, Canadian Radio-television and Telecommunications Commission, 2018. Accessed at https://crtc.gc.ca/eng/publications/s15/

1.2.1. Guiding Principles

In developing these models, PwC has been guided by certain principles provided to us by the CMPA (the Guiding Principles). Therefore, the models presented in this report should not be interpreted as a recommendation by PwC to adopt such models and/or an opinion by PwC as to their net economic benefit to Canada. In this context, our contribution framework models were developed with reference to the Guiding Principles set by the CMPA, as follows:

1. **Comprehensiveness**: models should broaden the contribution base to include new domestic content distribution industry segments provided through retail Wireless Service Providers (WSPs) and Internet Service Providers (ISPs). We refer to BDUs and the relevant media content distribution portions of WSPs and ISPs collectively as "Funding Segments";

2. **Minimum funding level:** the future funding levels achieved are, at a minimum, equal to the historical levels achieved in the existing framework in order to continue supporting Canadian content production in a sustainable manner. Based on an assessment of historic funding levels, a minimum target of funding (corresponding to the historical peak funding year) was set for the purpose of this report;

3. **Dynamism:** models allow for adjustments in market shares over time such that cumulative funding level and growth remains in line with the overall revenue level and growth of the Funding Segments;

4. **Fairness**: models should reflect the contribution shares in an equitable manner across Funding Segments;

5. **Minimum growth impediment:** a Funding Segments' contribution share will be determined such that it does not lead to an increased obligation for the distribution sector as a whole;

6. **Pro-SME (small and medium enterprises):** consideration should be given to the viability of smaller companies; and

7. **Minimum consumer impact:** models should minimize as much as possible any direct cost increases to Canadian consumers, in particular low income households.

1.3. Approach overview

The following four elements summarize the overall approach of our study:

- **Current state analysis**: We collected and analyzed information on Canada's media content distribution industry to understand the existing industry contribution framework, identify relevant industry segments, and depict past and expected future trends within these segments.

- **Contribution framework development**: Based on our understanding of current industry dynamics, the existing contribution framework, and the Guiding Principles outlined in 1.2, we specify a number of potential contribution framework model options.

- **Contribution framework evaluation**: After developing a number of potential contribution framework models, we evaluated the potential impacts of each of them with respect to the Guiding Principles, as outlined by the CMPA.

- **Reporting**: A report was prepared, which outlines the background, approach, and findings of our study[4].

[4] Throughout this report, the "$" sign refers to the Canadian Dollar. Wherever US dollars are used, they are referred to as USD.

1.4. Authors

This study has been prepared by members of PricewaterhouseCoopers LLP (PwC) Canada's Economics Practice. The key authors of the study are:

- Michael Dobner, National Leader, Economics Practice
- Alex Francis, Senior Economist
- Manpreet Kaur Juneja, Economist

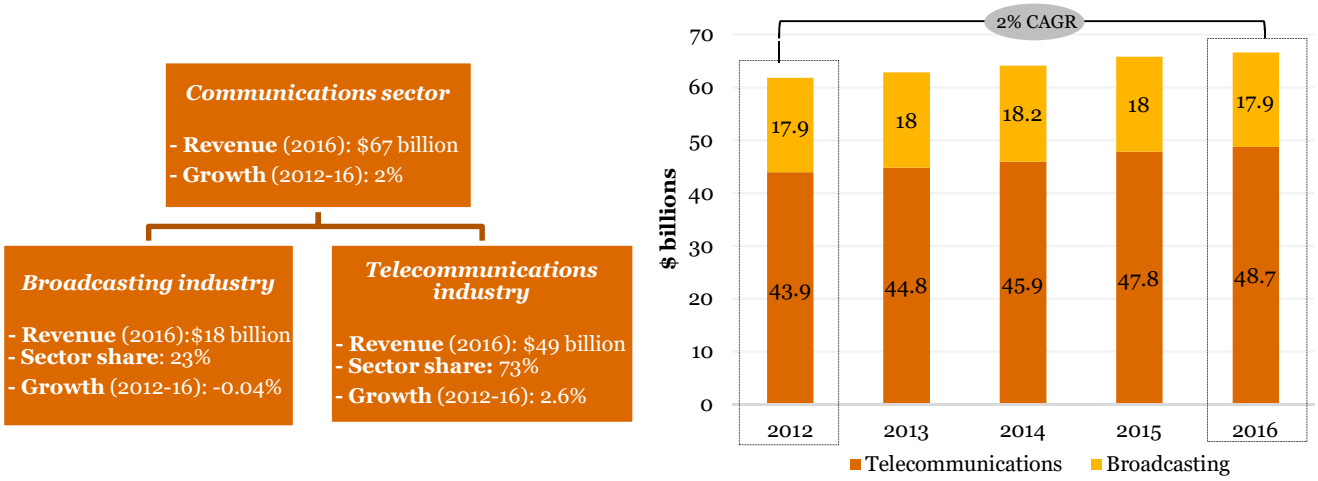
2. Current state overview

In this section we provide an overview of Canada's media content distribution industry and the existing contribution framework.

2.1. Media content industry overview

Canada's media content distribution industry is not defined as a discrete industry sector per the North American Industry Classification System (NAICS) or the Standard Industrial Classification (SIC), as utilized by Statistics Canada, the CRTC and other government organizations for the purposes of classifying and reporting industry statistics. Canada's communication sector does however include a number of relevant industries involved in the distribution of media content. The communications sector is regulated by the CRTC and can be divided into two broad constituent industries: broadcasting and telecommunications. The current revenue levels and growth of this sector, expressed in Compound Annual Growth Rate (CAGR) terms, are shown in the figure below.

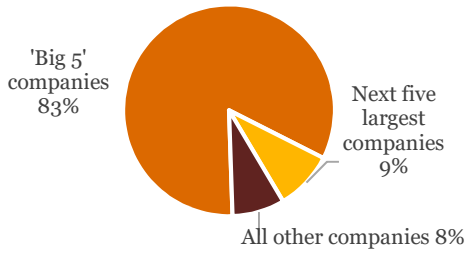
Figure 1: Communications sector structure and revenue growth (2012-2016)



Source: CRTC's Communications Monitoring Report 2017

According to the Canadian Industry Statistics (2018) database compiled by the department of Innovation, Science and Economic Development (ISED), the communications sector has more than 6,489 establishments. However, it is dominated by a small number of large, vertically and horizontally integrated companies. The 'Big 5' companies in the communications sector – Bell, Quebecor/Videotron, Rogers, Telus, and Shaw/Corus - accounted for 83% of communications sector revenue in 2016. The next five largest companies by revenue accounted for 9% of sector revenue while all remaining companies together accounted for 8% of communications sector revenues in 2016.

Figure 2: Communication sector: Market share of revenue, by company size (2016)



Source: CRTC's Communications Monitoring Report 2017

2.1.1. Broadcasting industry

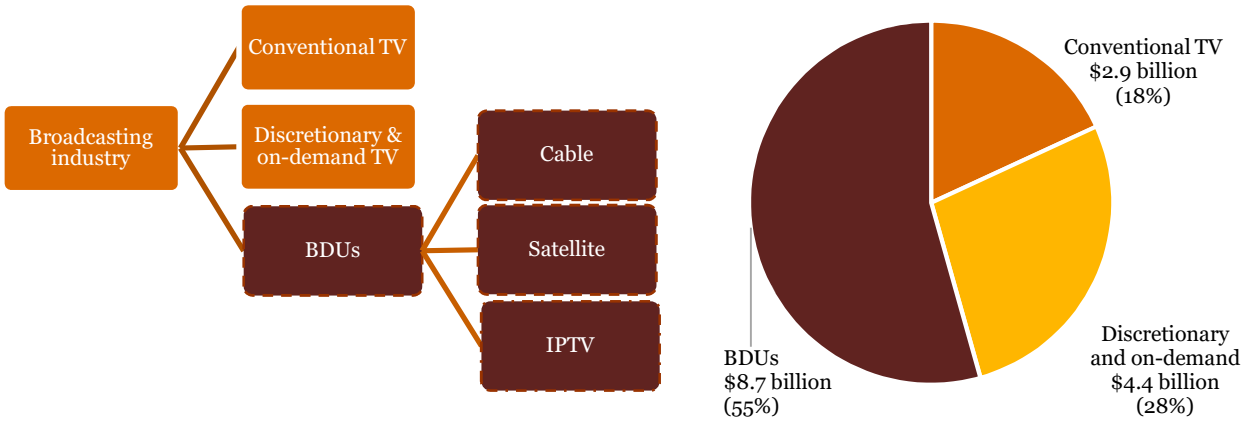
Canada's broadcasting industry recorded $17.8 billion in revenue in 2016, accounting for 23% of communications sector revenue. Canada's broadcasting industry can be divided into the following three industry segments:

- **Conventional TV services:** comprised of free TV services operating "over the air". In Canada, there are 120 conventional TV services with 93 being private and 27 public. Conventional TV transmitters are typically now only available in urban markets with most of the audience (over 80%) coming from redistribution on cable, satellite and fibre TV services. Conventional TVs share of the total TV audience has gotten smaller as niche discretionary TV services have emerged.

- **Discretionary and on-demand services:**
  - Discretionary services: covers all licensed individual pay TV and specialty services
  - On-demand services: covers all licensed pay-per-view and video-on-demand services.

- **Broadcasting Distribution Undertakings (BDUs)**: The BDU segment is the portion of the broadcasting industry involved in media content distribution. BDUs provide subscription television services to Canadians. They redistribute programming from conventional over-the-air television and radio stations. BDUs also distribute pay audio and discretionary services (i.e. pay, specialty, pay-per-view (PPV) and video-on-demand (VOD) services). As shown in the figure below, the BDUs sector is made up of cable, national direct-to-home (DTH) satellite, or Internet Protocol television (IPTV) service providers.

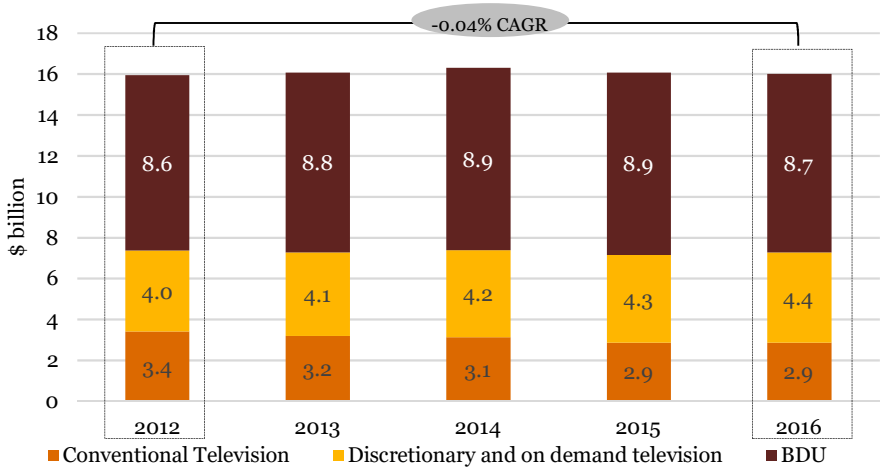
Figure 3: Broadcasting industry structure and revenue shares by segment (2016)



Source: CRTC's Communications Monitoring Report 2017

As shown in the figure below, broadcasting industry revenue has been stable (in nominal terms and contracting in real terms), with a -0.04% CAGR from 2012 to 2016. Discretionary and on-demand television, however, comprise a larger share of broadcasting industry revenue while conventional television shares of the industry are declining.

Figure 4: Broadcasting industry revenue, by major segment (2012 -2016)[5]

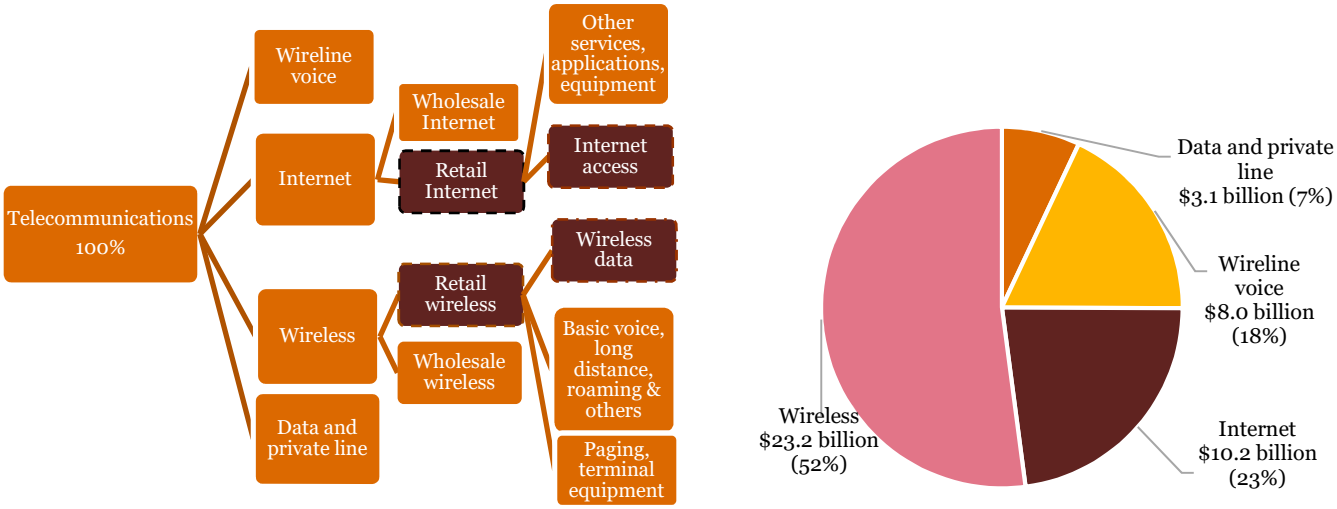


Source: CRTC's Communications Monitoring Report 2017

2.1.2. Telecommunications industry

Canada's telecommunications industry recorded $49 billion in revenue from retail and wholesale activities in 2016, accounting for 73% of communications sector revenue. As at 2016, retail activities accounted for 92% of telecommunications industry revenue ($44 billion). The telecommunications industry provides four types of services (i.e. wireline voice (local/long distance), Internet, wireless, data and private line), which in turn can be broken down into a number of discrete service offerings.

Figure 5: Telecommunications industry segments and revenue share (of retail revenue), by segment



Source: CRTC's Communications Monitoring Report 2017

Portions of the Internet and wireless (retail) segment are involved in the distribution of media content as outlined below. In International Data Corporation's (IDC) *Canadian Consumer Indicators Survey* conducted in 2018 (IDC's

[5] Excludes the radio segment of the broadcasting industry

Consumer survey), Wireless, Internet, TV and over the top (OTT) video services, 57% of consumers reported subscribing to monthly OTT services and 38% rented or purchased transactional VOD.

2.2. Media content distribution segments

The following three segments identified within broadcasting and telecommunications industries are predominantly engaged in distributing media content to consumers:

- BDUs
- Retail Internet
- Wireless data

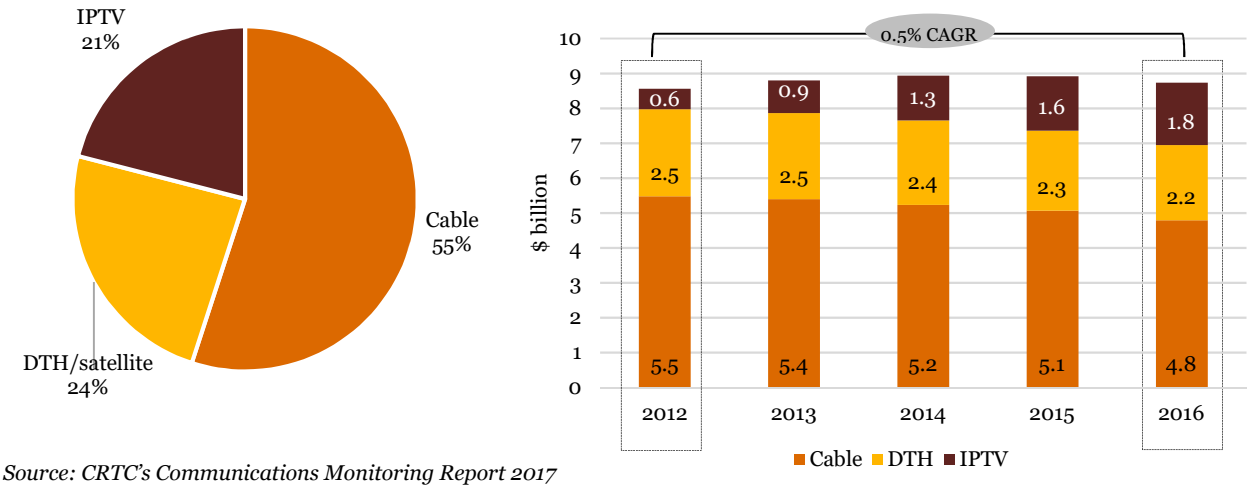
The structure, revenue and growth prospects of each of these three media content distribution segments are outlined below.

2.2.1. BDUs

In 2016, BDU revenue was $8.7 billion and accounted for 54.4% of total revenues in the broadcasting industry. The BDU segment comprises three sub-segments that differ by the network used for media distribution: cable TV, DTH/satellite, and IPTV. IPTV is distributed over an Internet platform while the other two sub-segments use cable and satellite platforms.

As shown in the figure below, overall revenues produced by the BDU sector have grown by a modest 0.5% CAGR in 2012-16. The distribution network for traditional platforms (i.e. cable and DTH/satellite) is well-established with these two sectors currently accounting for a large portion of total BDU revenue.

Figure 6: BDU segment: revenue share (2016) and growth (2012 -2016), by sub-segment

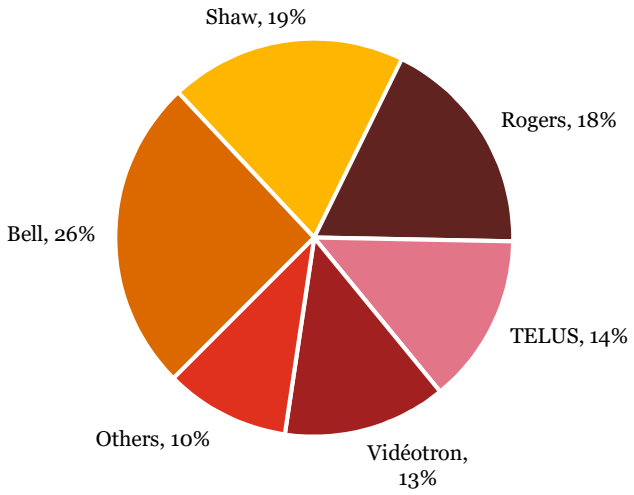


Source: CRTC's Communications Monitoring Report 2017

As reported in CRTC's *Communications Monitoring Report 2017*, overall earnings before interest, tax, depreciation and amortization (EBIDTA) for the BDU segment was 16% in 2016. Over the same period, EBIDTA for BDU sub-segments was 22% for cable, 31% for DTH/satellite and -18% for IPTV in 2016.

Approximately 80% of respondents to IDC's Consumer Survey reported possessing a TV subscription. As shown in the figure below, the 'Big 5' companies in the communications sector account for 90% of all TV subscriptions in Canada.

Figure 7: TV subscriptions by company



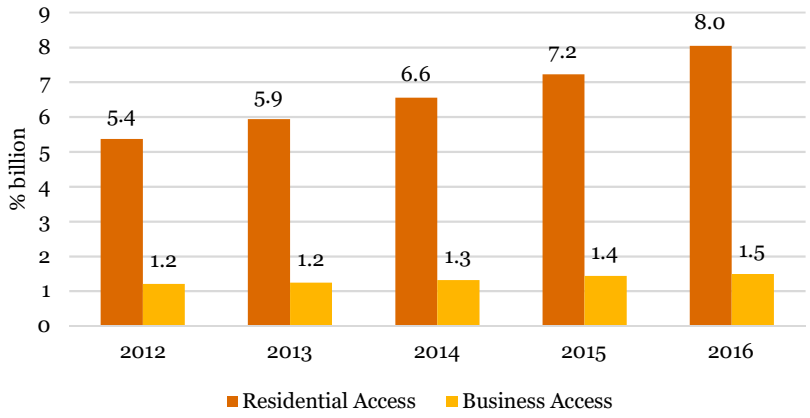
Source: IDC consumer Survey, 2018

Growth prospects: PwC's Entertainment and Media Outlook 2018-22 forecasts that **TV subscriptions** in Canada will **decline by 0.3% (CAGR)** between 2017 and 2022.

2.2.2. Retail Internet

In 2016, retail Internet services recorded a total revenue of $10.2 billion. Of this, over 90% or $9.5 billion was earned by providing Internet access to consumers while the remaining 10% of the revenue was earned from applications, equipment and other services. The residential sector accounts for the majority of the Internet access revenue at $8.0 billion and the business sector accounts for the remaining $1.5 billion.

Figure 8: Retail Internet access revenue (2012 - 2016)



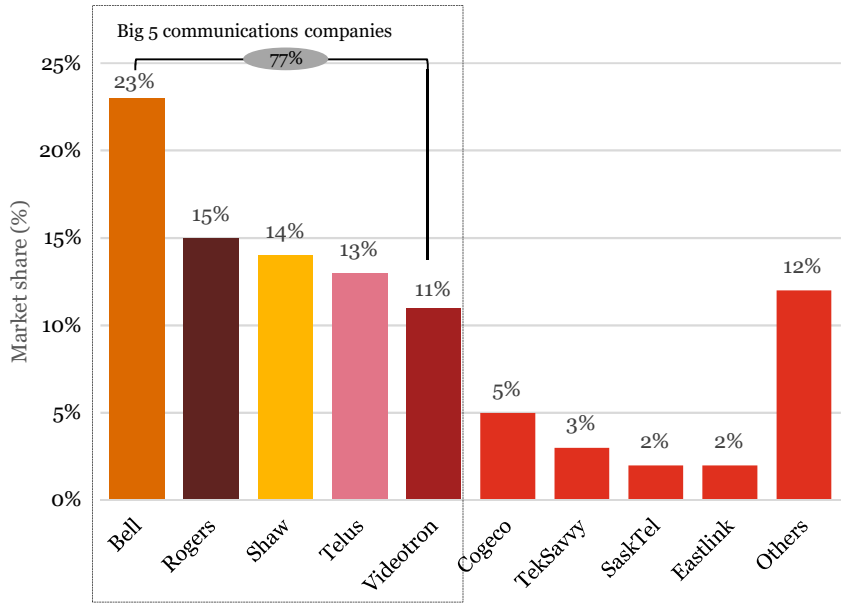
Growth prospects:

PwC's Entertainment and Media Outlook 2018-22 forecasts that **revenue from Internet access services** in Canada will **increase by 3.2% (CAGR)** between 2017 and 2022.

Source: CRTC's Communications Monitoring Report 2017

In the IDC's Consumer Survey 2018, over 96% of respondents to the survey reported to possess an Internet subscription with the 'Big 5' communications companies, accounting for 77% of total market share.

Figure 9: Internet subscription – consumer choices and market share



Source: IDC Consumer Survey, 2018

Video consumption trends

Traditionally, the business of Internet Service Providers (ISPs) was based on delivering text-based communication. Over time, the proliferation of broadband networks and new compression technologies stimulated the consumption of video and broadcasting-type content. In 2008, a Cisco study estimated that 68% of North American Internet traffic is attributed to video. Within less than a decade, the share of video traffic consumption of total broadband consumption has increased to 77%[6].

Growth prospects: PwC's Entertainment and Media Outlook 2018-22 forecasts that **video consumption in fixed broadband data** is expected **to grow by 21% (CAGR)** between 2017 and 2022.

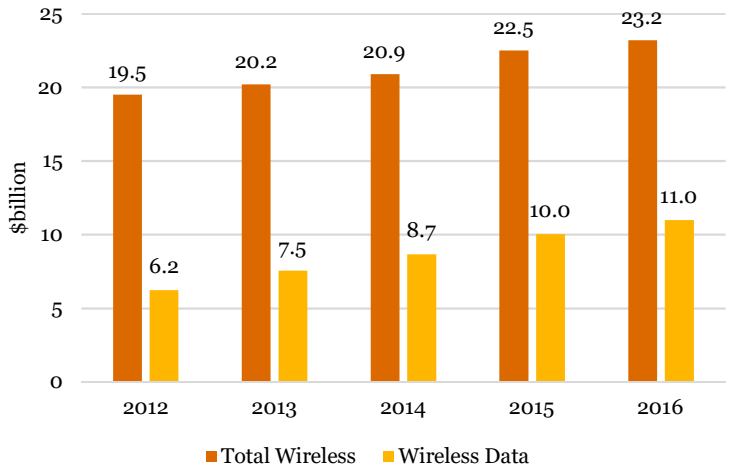
2.2.3. Wireless data

The retail wireless segment is divided into six types of services - basic voice, long distance voice, paging, terminal equipment, wireless data and roaming. The core business of Wireless Service Providers (WSPs) was originally based on delivering communication services through voice services. With the advent of smartphones, the capabilities of wireless/mobile services has transformed dramatically.

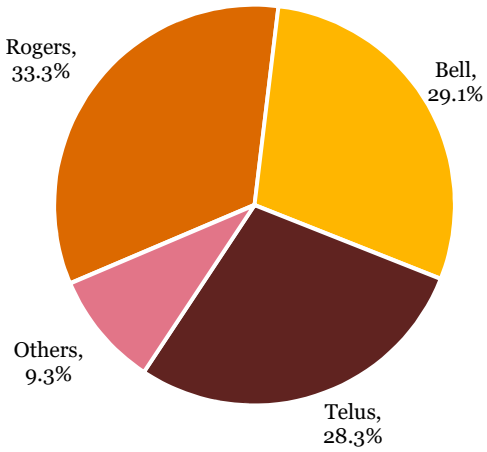
As shown in the figure below, total retail wireless revenue was $23.2 billion with 47% ($11.0 billion) attributed to wireless data. According to IDC's Consumer Survey, 98% of respondents in Canada report to possess wireless service connections. According to BMI Research, Bell, Telus and Rogers accounted for 91% of all mobile subscriptions. Other key providers of wireless services include Koodo, Fido, SaskTel, Videotron, Freedom/WIND Mobile, Terre Star, etc.

[6] As estimated by Data Consumption Canada in PwC's Global Entertainment and Media Outlook 2018-22. Note this consumption also includes user-generated content.

Figure 10: Retail wireless revenue, by sub-segment (2012 -2016) and retail wireless market share, by firm (2018, Q1)



Source: CRTC's Communications Monitoring Report 2017



Source: BMI Research

Growth prospects: PwC's Entertainment and Media Outlook 2018-22 forecasts that **revenue from mobile Internet access services or wireless data services** in Canada will **increase by 9.5%** (CAGR) between 2017 and 2022.

Video consumption trends

As screen size is becoming less important for consumers, smartphones and other Internet-enabled devices are increasingly being used for video content consumption. Video consumption accounts for 85% of total data consumption in smartphones. PwC's Entertainment and Media Outlook Survey 2018-22 forecasts that video consumption in smartphone data is expected to grow at 32.3% (CAGR) between 2017 and 2022.[7] At the same time, Internet-based video services like Netflix have recently announced plans for a standalone wireless app version of their popular streaming video platform[8].

2.3. Existing contribution framework

Under the existing financial contribution framework, BDUs are required to contribute 5% of their previous year's gross revenues from broadcasting activities towards Canadian programming each year[9]. This contribution applies to terrestrial BDUs (Cable, Internet Protocol Television), DTH/satellite BDUs (DTH BDUs) and other smaller BDUs[10].

Given that companies in the BDU sector are the sole industry participants making financial contributions within the existing contribution framework, the amount of funding towards Canadian programming is wholly tied to the revenue growth of this sector. In line with BDU revenue peaking in 2014, BDU contribution towards Canadian programming also peaked in 2014 (refer to the figure below).

[7] As estimated by Data Consumption Canada in PwC's Global Entertainment and Media Outlook 2018-22. Note this consumption also includes user-generated content.
[8] https://variety.com/2018/digital/news/netflix-mobile-only-streaming-pricing-test-1203030443/
[9] Less their required contribution to the Independent Local News Fund (ILNF) and any allowable contribution to local expression over the current broadcast year.
[10] BDUs with fewer than 2,000 subscribers are fully exempted from a contribution to content production.

Figure 11: BDU revenue and contributions to the Canadian programming funds (2012-2016)

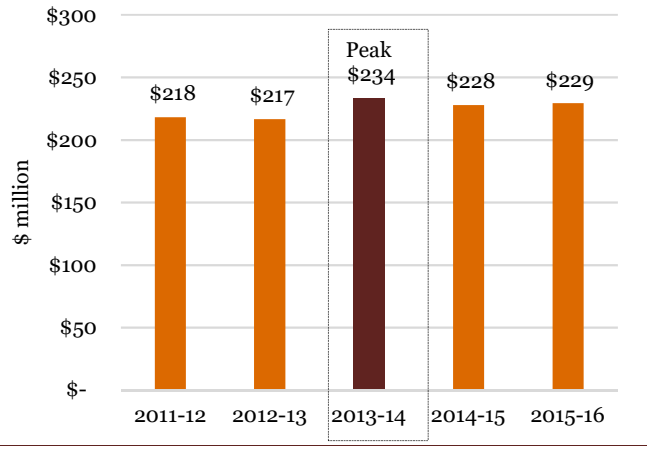
Source: CRTC's Communications Monitoring Report 2017

BDU contributions to Canadian programming are channeled through the following[11]:

- **Canada Media Fund (CMF)**
- **Expenditures on community channels**
- **Other independent funds**

The BDU contribution to the CMF accounted for around 50% of BDUs' total annual financial contributions in support of Canadian programming over the past five years. CMF receives funds from both BDUs and the Government of Canada.

Figure 12: CMF revenues from BDUs (2011-12 to 2015-16)[12]



Source: CMF

[11] BDUs were also required to contribute towards the Local Program Improvement Fund (LPIF) up until this fund was discontinued in 2014.
[12] CMF revenues were adjusted for one-time payments of BDUs non-compliant with the CRTC contribution requirements.

2.3.1. Future funding contributions

Despite the increasingly significant role played by Internet and wireless data segments of the communications sector in providing consumers with video content, the existing contribution framework requires financial contributions solely from BDUs. Revenues in the BDU segment are now on a declining trajectory, which, given the existing framework's sole focus on BDU contributions, is having a direct negative impact on the level of private-sector funding contributions available to support the production of Canadian content. The decline in BDU revenue is not expected to be reversed in the near future, with forecasts of TV subscriptions in Canada set to decline by CAGR -0.3% between 2017 and 2022[13].

Internet and wireless service platforms are not currently required to contribute to Canadian programming, despite becoming increasingly significant elements of Canada's media content distribution system. The role played by these segments is expected to intensify over the next five to ten years in line with forecasts of growth in media content consumption within these segments.

The current trajectories of each of the segments involved in the distribution of media content are not uniform. BDUs are the sole contributors under the existing contribution framework. They are currently, and are expected to continue, experiencing declining revenues. In contrast, the Internet and wireless segments of the broadcasting sector, which are on a growth trajectory, are not required to contribute under the existing framework. This misalignment in revenue trajectory and contribution requirements of these three segments has, and will continue to have, a direct negative impact on the level of private-sector funding available to support the production of Canadian content.

[13] PwC Global Entertainment and Media Outlook 2018-22.

3. Modelling a new contribution framework

In this section, we develop a number of options for a new contribution framework. As indicated previously, we developed model options with consideration to the Guiding Principles (see Section 1.2.1).

3.1. Model development process

There can be a number of contribution framework models that each adhere to the Guiding Principles. We note that the models presented in this section all adhere to the first three Guiding Principles (i.e. comprehensiveness, minimum funding level and dynamism) and differ in the degree of adherence to the remaining Guiding Principles.

We present these model options in terms of minimum and maximum funding targets, which create a range of possible models for consideration. In developing the models, we took the following general steps:

- **Step 1**: Broaden the revenue base for media content funding beyond the BDU segment, in line with Guiding Principle 1, comprehensiveness;
- **Step 2**: Develop forecasts of the revenues and respective revenue market shares of the segments included in step 1. This allows us to meet Guiding Principle 3, dynamism;
- **Step 3**: Identify the funding target range in line with Guiding Principle 2, minimum funding level;
- **Step 4**: Develop models that adhere to the first three Guiding Principles noted in steps 1 to 3; and
- **Step 5**: Assess how each model option adheres to the remaining Guiding Principles (4-7) (refer to section 4).

3.2. Expanding the revenue base

The first step in our model development addresses Guiding Principle 1, comprehensiveness (i.e. broadening the revenue base to include relevant media content distribution industry segments). To broaden the revenue base of the existing contribution framework, we have included revenue from the Residential Internet and Wireless data segments, in addition to the BDU revenue currently factored into the existing contribution framework.

We therefore refer to the following media content distribution segments as contribution framework "Funding Segments" for the remainder of this report:

1. BDUs
2. Residential Internet
3. Wireless data

3.2.1. Inclusion of Residential Internet

We note that in our modelling, we consider the retail Internet access revenue earned from the residential sector and not the total revenue earned by ISPs. The revenues of this Funding Segment was established through excluding the following items from the total revenues earned from Internet services:

- wholesale revenue earned by ISPs because wholesale access is purchased with the intent of reselling the purchased capacity on the retail market to businesses and consumers;

- revenue earned from applications, equipment and other Internet-related services; and
- retail Internet access revenue earned from the business sector, as it is typically not used to consume media content.

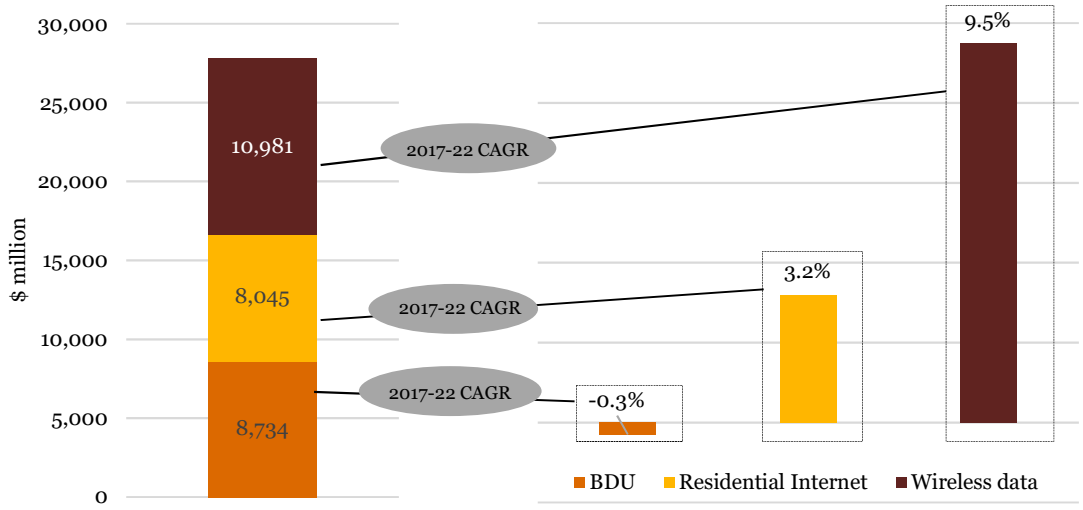
3.2.2. Inclusion of Wireless data

Similarly, for WSPs' revenue, we have included only the revenue attributable to wireless data services and as such have excluded the following items:

- wholesale revenue that generally consists of roaming revenues a company receives for processing calls from wireless subscribers of other companies roaming within its territories. Consumers typically do not consume media content during roaming; and
- revenue from the sale of wireless services to Mobile Virtual Network Operators (MVNOs). Media is consumed when wireless data services are sold to final consumers and not resellers.

The current revenue levels and growth forecasts for these segments is presented in the figure below.

Figure 13: Current (2016) and forecast revenue (2017-22 CAGR), by Funding Segment

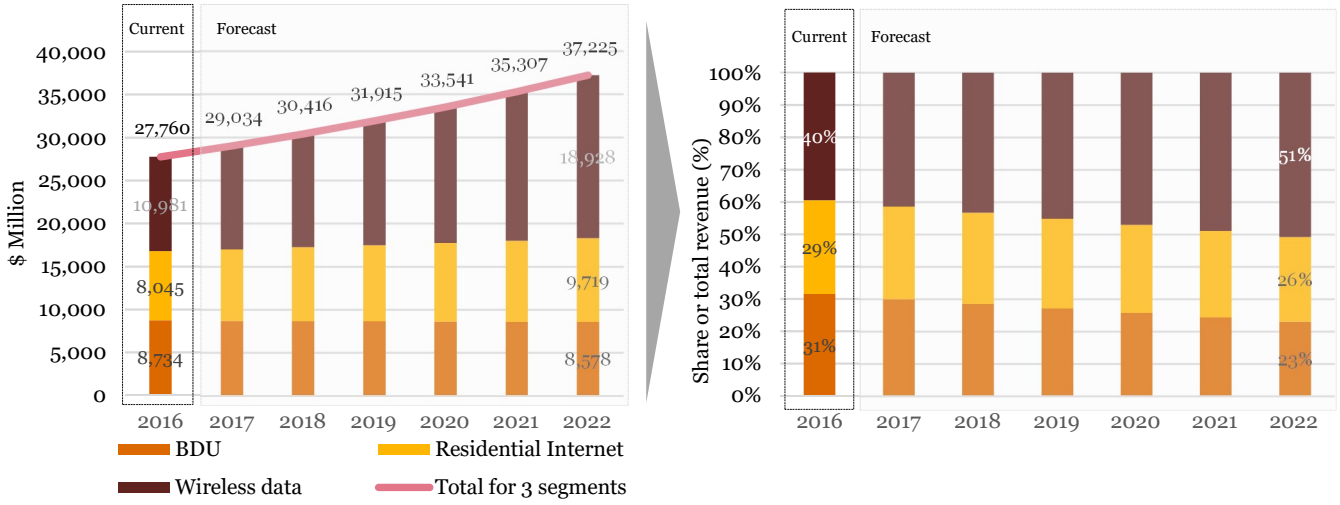


Source: CRTC Communications Monitoring Report 2017 & PwC Global Entertainment and Media Survey 2018-22

Based on each of the three segments' 2016 revenue levels, we have applied PwC's 2017-22 growth forecasts to calculate revenue levels for each segment from 2017 to 2022.

As shown in the figure below, as the wireless data segment is projected to grow the fastest over the forecast period, this segment is expected to increases its share of the total revenue of the three Funding Segments, largely at the expense of BDUs and, to a lesser extent, residential Internet.

Figure 14: Forecasts of revenue & market share of revenue, by segment (2017-22)



Source: Calculations based on CRTC Communications Monitoring Report 2017 & PwC Global Entertainment and Media Survey 2018-22

We designed our models in consideration of these projected trends as they relate to the relative market shares (i.e. revenue share) in order to incorporate Guiding Principle 3, dynamism, into the model development process.

We note that we have selected revenue as the key metric in developing financial contribution models, as it is relatively easy to monitor and less susceptible to misreporting relative to other financial metrics such as profits and costs. It is also least prone to inaccuracies and manipulation when differentiated between various services at the firm levels. In contrast, profits and costs are more difficult to accurately attribute to individual service offerings.

3.3. Funding targets

Our second step addresses Guiding Principle 2, minimum funding level, which was set, as a starting point, at the historical peak of the contributions under the existing framework. This is consistent with the objective of maintaining the sustainability of funding contributions in support of the production of Canadian content.

As outlined in section 2.3, Canadian programming funds reached a peak contribution level of $437 million in 2013-14 and has since been declining in line with the trajectory of BDU revenues (which peaked at $8.93 billion in revenue in 2013-14). As this was the peak funding contribution year, we have set, for the purpose of our analysis, the 2013-14 funding contribution levels as the target to be the minimum magnitude of contribution funds achieved during all forecast periods (annual target) under a new contribution framework.

A target of $437 million in 2013-14 prices is then used to define annual targets for new financial contribution framework models. In this modelling exercise, we set these annual targets using the two potential extreme possibilities, which represent our lower bound (minimum target/Model Type L) and upper bound (maximum target/Model Type U) funding targets, as follows:

- **Inflation-based targets - lower bound/minimum targets (Model Type L)**: Increases the annual funding target to account for increases in the cost of living (i.e. the inflation rate).

- **Segment growth-based targets - upper bound/maximum targets (Model Type U):** Increases the annual funding target in line with the nominal growth rate of the three Funding Segments. We note that the nominal growth rate is the sum of real growth (all growth excluding inflation) and inflation growth.

3.3.1. Rationale for target selection

We have defined the above targets in view of the overarching objectives of the financial contribution framework and the Guiding Principles. The objective is to ensure that the level of funding to producers for the production of Canadian content is maintained on a sustainable basis.

Inflation-based targets ensure that the purchasing power of the funds is maintained at all times, regardless of fluctuations in growth within the communications sector. As the Funding Segments are collectively forecasted to grow at a rate greater than the inflation rate, we incorporate inflation-based targets as a lower-bound target, which can be viewed as a mitigation strategy for growth fluctuations within the Funding Segments.

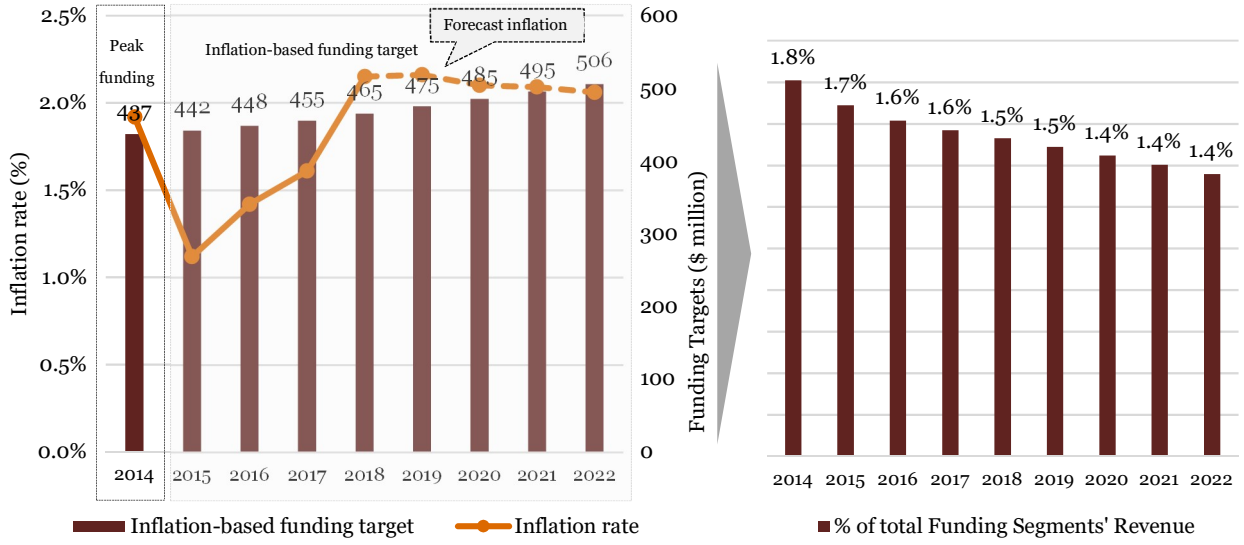
We have selected Segment growth-based targets as upper bound targets to link the funding made available for the production of Canadian content to the revenue growth of the Funding Segments. The rationale being that revenues generated by the Funding Segments is generally correlated with the demand for film and video content. Segment growth-based targets are also consistent with Guiding Principle 5, minimum growth impediment, as the increase in funding contribution is proportional to the expected growth in the sector.

3.3.2. Inflation-based funding targets (Model Type L)

As noted previously, this represents the lower bound or minimum level of funding targeted.

Annual inflation-based targets have been set through applying actual inflation rates (up to 2017) and forecast inflation rates (2018 onwards) to the minimum funding target in 2014 ($437 million). As a share of Funding Segments' revenue, the funding contribution required to meet the inflation-based funding target declines over time. Annual inflation-based targets throughout the forecast period, and the share of Funding Segments' revenue they represent, are shown in the figure below.

Figure 15: Inflation-based targets and funding target as a share of Funding Segments' revenue (2014-22)



Source: Calculations based on CRTC Communications Monitoring Report 2017 & PwC Global Entertainment and Media Survey 2018-22 Note: Inflation rate sourced from IMF World Economic Outlook Database October 2018, accessed through Statista[14]

[14] https://www.statista.com/statistics/271247/inflation-rate-in-canada/

3.3.3. Segment growth-based funding targets (Model Type U)

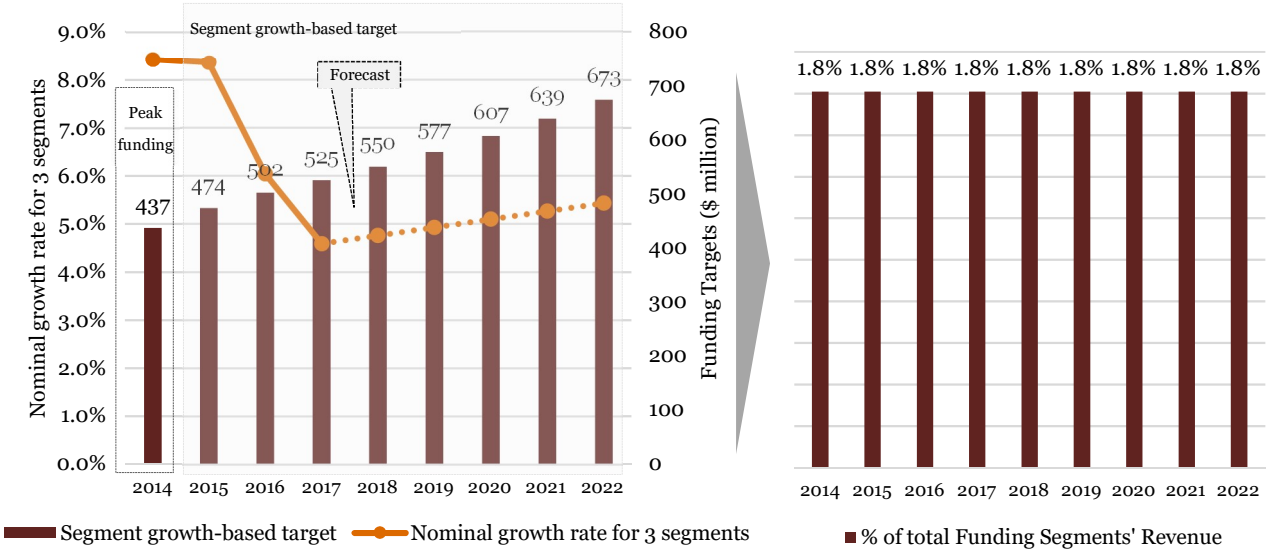
As noted previously, Segment growth-based funding targets represent the upper bound or maximum level of funding in our model development process.

Segment growth-based funding targets have been set by applying actual nominal revenue growth rates of the Funding Segments' (up to 2017) and forecast nominal revenue growth rates (2018 onwards) to the minimum funding target in 2014 ($437 million).

From 2017 onwards, we have used the 2017-22 CAGR forecasts generated in PwC's Global Entertainment and Media Survey 2018-22. We note the aggregate forecast revenue growth rate for Funding Segments is greater than forecast inflation throughout the forecast period. Due to declines in the BDU sector from 2014, the actual growth in Funding Segments' revenues slowed from 2015 to 2017. As the funding contribution is directly linked to Funding Segments' revenue growth, the resulting funding contribution as a share of revenue is constant over the forecast period.

Annual Segment growth-based targets throughout the forecast period, and the share of Funding Segments' revenue they represent, are shown in the figure below.

Figure 16: Segment growth-based targets and funding target as a share of Funding Segments' revenue (2014-22)



Source: Calculations based on CRTC Communications Monitoring Report 2017 & PwC Global Entertainment and Media Survey 2018-22

3.4. Allocation schemes within model types

Model Type L and Model Type U provided a framework for calculating the percentage of the Funding Segments' total revenues required to be contributed in order to achieve the lower and upper bounds funding targets set in each of these model types. However, there also exists the question of how the required funding contribution will be apportioned between Funding Segments in order to meet the funding target. To this end, we developed the following three allocation schemes that can be incorporated into each of the two model types, creating a total of six models (i.e. 2x3):

1. **Scheme 1: Gap reallocation** - BDUs contribute 5% of their revenues. The gap from the target funding level[15] is met by contributions from the other Funding Segments.

2. **Scheme 2: Gradual reallocation** –An intermediary scheme that commences with Scheme 1 contribution levels before gradually achieving Scheme 3 contribution levels. Once Scheme 3 levels are achieved, Funding Segments' contributions becomes identical to Scheme 3.

3. **Scheme 3: Market share-based reallocation** – Funding contributions are allocated between the three Funding Segments based on their relative market shares in terms of revenue.

Based on the allocation scheme and model types, the models options developed as part of this study are summarized as follows:

Table 1: Model options, based on funding target and allocation scheme

		Funding target:	
		Inflation-based (Model Type L)	**Segment growth-based (Model Type U)**
Allocation scheme	**Scheme 1**	Model Type L, Scheme 1	Model Type U, Scheme 1
	Scheme 2	Model Type L, Scheme 2	Model Type U, Scheme 2
	Scheme 3	Model Type L, Scheme 3	Model Type U, Scheme 3

Below we provide a description of these three schemes and discuss these model options in turn.

[15] The difference between the defined annual funding target and BDUs' funding contribution

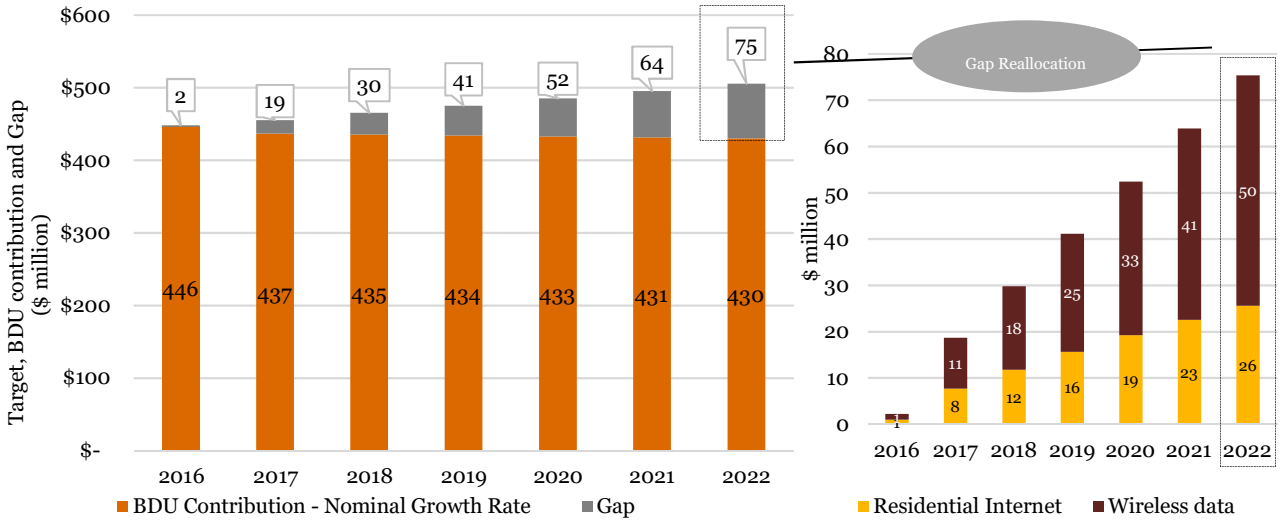
3.4.1. Gap reallocation (Scheme 1)

Under the Scheme 1 i.e. 'Gap reallocation', BDUs continue to contribute 5% from their revenue while the remainder of the target funding level (the funding gap), is met by the other two Funding Segments, in proportion to their relative market shares in revenues.

Model Type L with Scheme 1

Under this model, there is a funding gap of $2 million in 2016 growing to $75 million in 2022. The size of this gap, relative to BDUs' contribution and its reallocation under this model, is shown in the figure below.

Figure 17: Model Type L with Scheme 1: Contribution by Funding Segment (2016 - 2022)



Under this model, the contribution share of revenue for both the residential Internet and wireless data Funding Segments would be 0.1% in 2018, increasing to 0.3% in 2022 while the BDU contribution share of revenue is constant at 5% over this period.

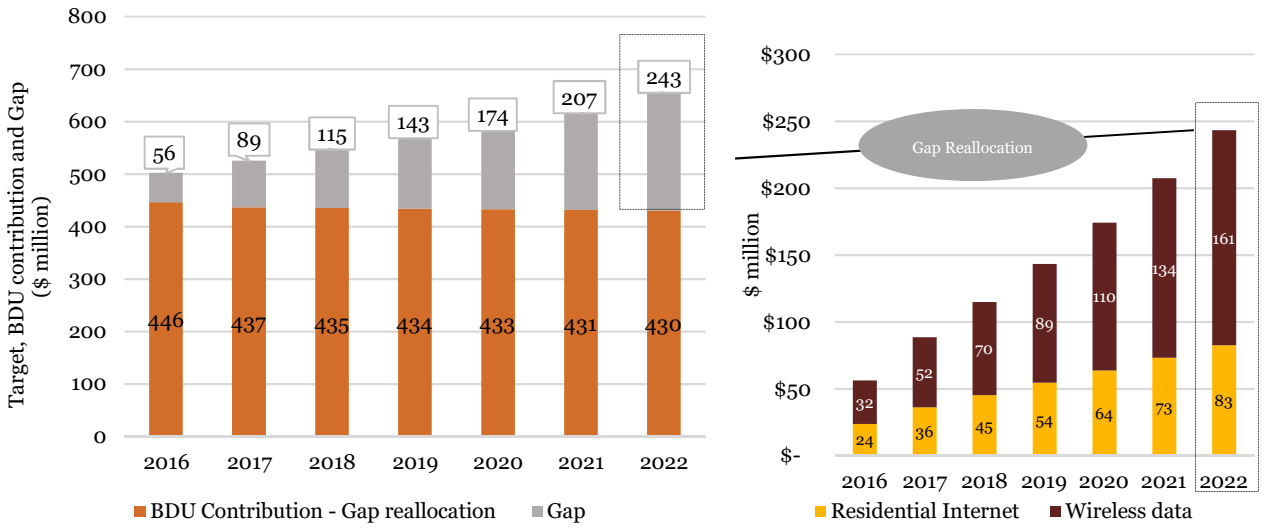
Table 2: Model Type L with Scheme 1: Contribution shares of Funding Segments' revenue

	2016	2017	2018	2019	2020	2021	2022
BDUs	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Residential Internet	0.0%	0.1%	0.1%	0.2%	0.2%	0.2%	0.3%
Wireless data	0.0%	0.1%	0.1%	0.2%	0.2%	0.2%	0.3%

Model Type U with Scheme 1

Under this model, there is a funding gap of $56 million in 2016 growing to $243 million in 2022. The size of this gap, relative to BDUs' contributions and their reallocation under this model, is shown in the figure below.

Figure 18: Model Type U with Scheme 1: Contribution by Funding Segment (2016 - 2022)



Under this model, the contribution share of residential Internet and wireless data revenue is greater than the Model Type L with gap reallocation, increasing from 0.5% in 2018 to 0.8% in 2022 while the BDU contribution share of revenue is constant at 5% over this period.

Table 3: Model U with Scheme 1: Contribution shares of Funding Segments' revenue

	2016	2017	2018	2019	2020	2021	2022
BDUs	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Residential Internet	0.3%	0.4%	0.5%	0.6%	0.7%	0.8%	0.8%
Wireless data	0.3%	0.4%	0.5%	0.6%	0.7%	0.8%	0.8%

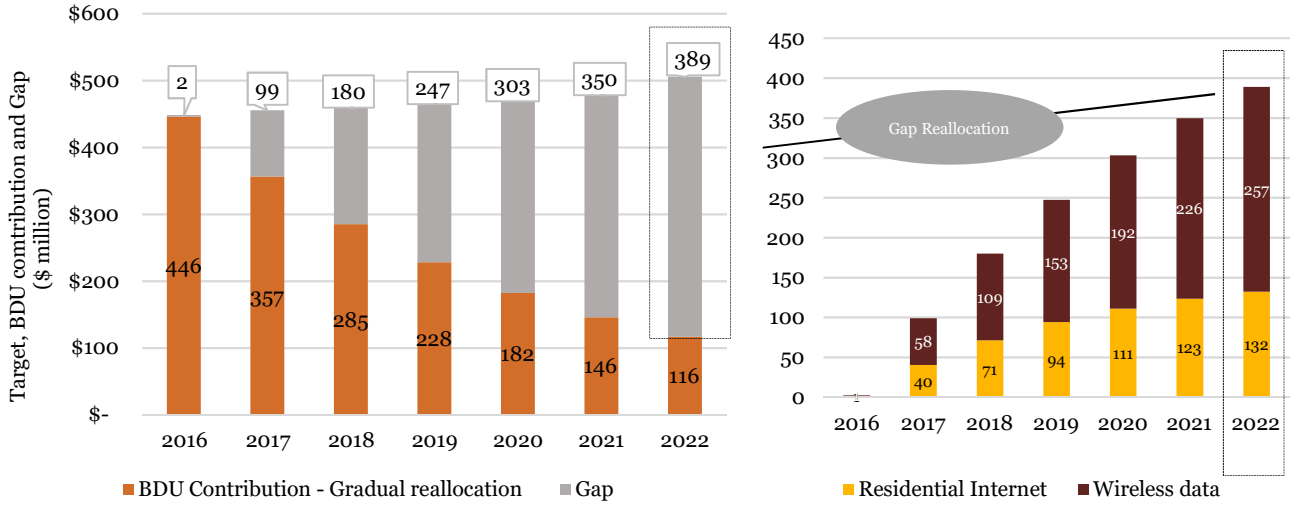
3.4.2. Gradual reallocation (Scheme 2)

Scheme 2 i.e. 'Gradual reallocation' is an intermediary scheme between Scheme 1 and Scheme 3. Scheme 2 starts with Scheme 1 i.e. 'Gap reallocation' contribution levels before taking a gradual approach to achieving Scheme 3 contribution levels i.e. 'Market share-based reallocation'. Once Scheme 3 contribution levels are achieved, the contribution levels in Scheme 2 become identical to Scheme 3.

Model Type L with Scheme 2

Under this model, there is a funding gap of $2 million in 2016 growing to $389 million in 2022. The size of this gap, relative to BDUs' contribution and its reallocation under this model, is shown in the figure below.

Figure 19: Model L with Scheme 2: Contribution by Funding Segment (2016 - 2022)



Under this model, the contribution share of residential Internet and wireless data revenue increases from 1.1% in 2018 to 1.4% in 2022 while the BDU contribution share of revenue declines from 5% to 1.4% over this period.

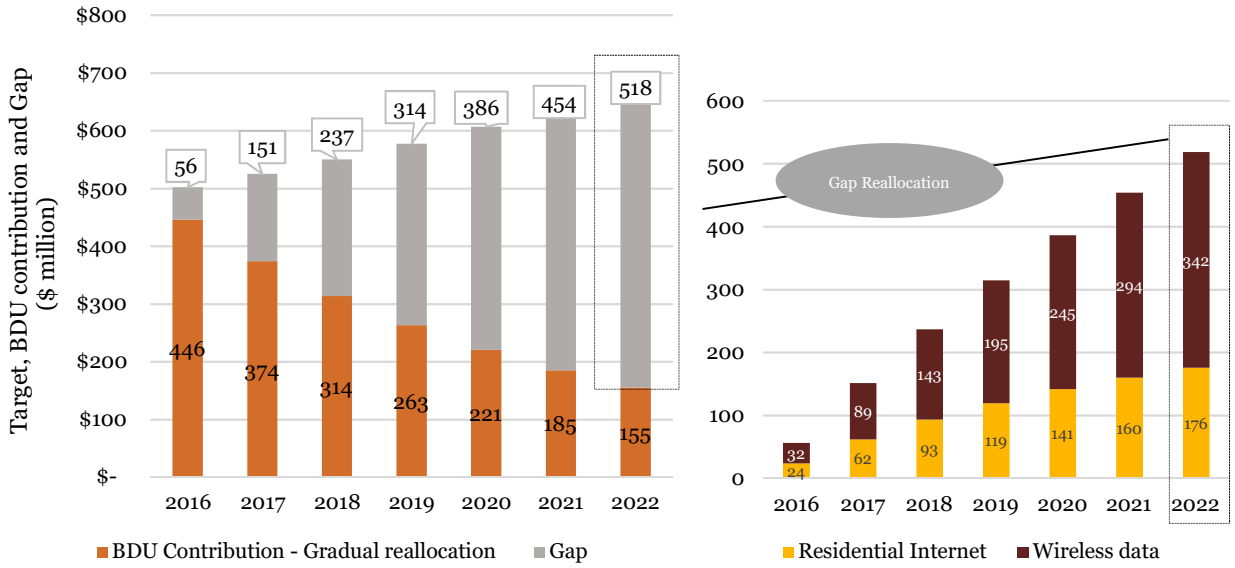
Table 4: Model L with Scheme 2: Contribution shares of Funding Segments' revenue

	2016	2017	2018	2019	2020	2021	2022
BDUs	5.0%	4.1%	3.3%	2.6%	2.1%	1.7%	1.4%
Residential Internet	0.0%	0.5%	0.8%	1.1%	1.2%	1.3%	1.4%
Wireless data	0.0%	0.5%	0.8%	1.1%	1.2%	1.3%	1.4%

Model Type U with Scheme 2

Under this model, there is a funding gap of $56 million in 2016 growing to $518 million in 2022. The size of this gap, relative to BDUs' contributions and their reallocation under this model, is shown in the figure below.

Figure 20: Model Type U with Scheme 2: Contribution by Funding Segment (2016 - 2022)



Under this model, the contribution share of residential Internet and wireless data revenue increases from 1.1% in 2018 to 1.8% in 2022 while the BDU contribution share of revenue declines from 5% to 1.8% over this period.

Table 5: Model Type U with Scheme 2: Contribution shares of Funding Segments' revenue

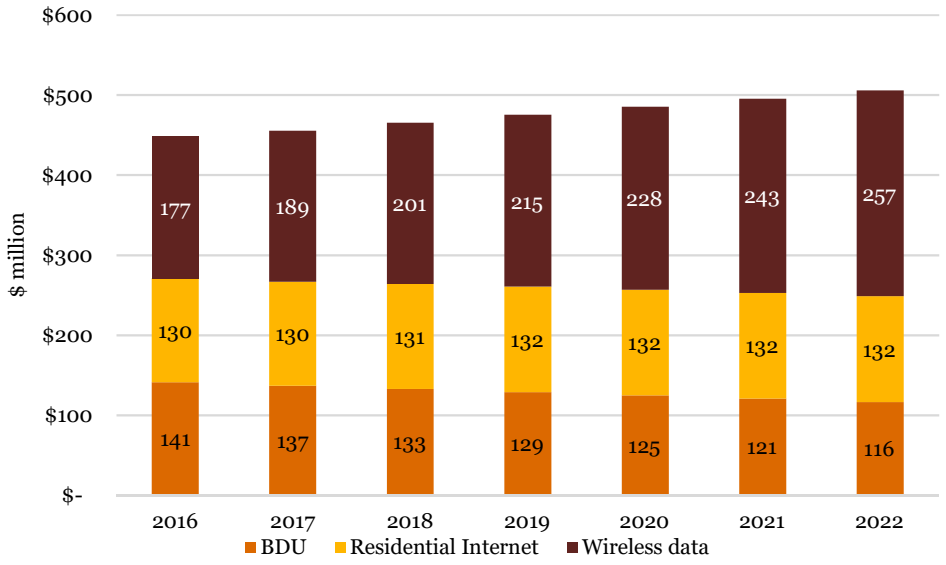
	2016	2017	2018	2019	2020	2021	2022
BDUs	5.0%	4.3%	3.6%	3.0%	2.6%	2.2%	1.8%
Residential Internet	0.3%	0.7%	1.1%	1.4%	1.6%	1.7%	1.8%
Wireless data	0.3%	0.7%	1.1%	1.4%	1.6%	1.7%	1.8%

3.4.3. Market share-based reallocation (scheme 3)

In the market share-based allocation scheme, funding targets are allocated between the three Funding Segments in proportion to their relative market share of revenue. Note that the relative market shares change over time materially due to a very different growth trajectory of the three Funding Segments.[16]

Model Type L with scheme 3

Figure 21: Model Type L with Scheme 3: Contribution by Funding Segment (2016 - 2022)



Under this model, the contribution share of revenues is the same for all Funding Segments and declines in the same proportion for all Funding Segments with the growth in total revenue throughout the modelled period.

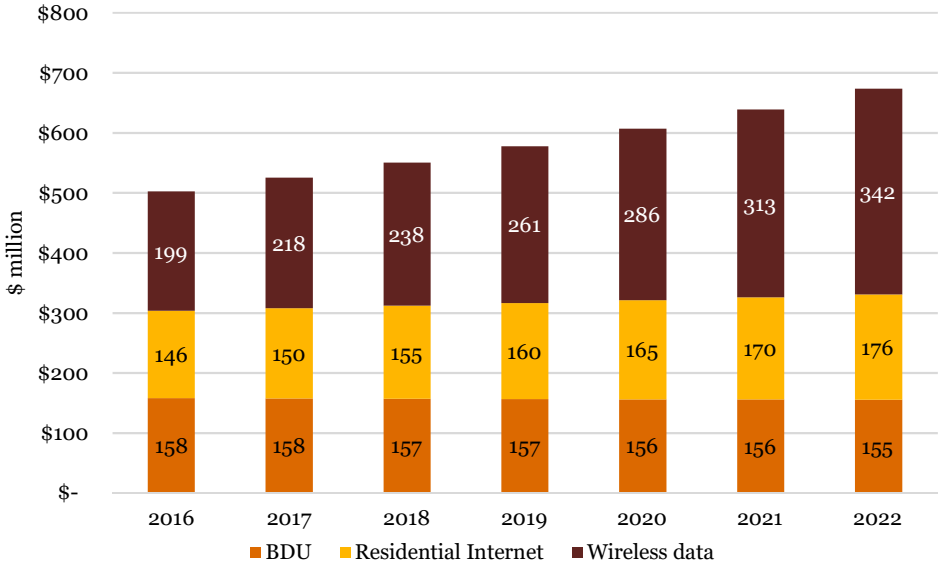
Table 6: Model Type L with Scheme 3: Contribution shares of Funding Segments' revenue

	2016	2017	2018	2019	2020	2021	2022
BDUs	1.6%	1.6%	1.5%	1.5%	1.4%	1.4%	1.4%
Residential Internet	1.6%	1.6%	1.5%	1.5%	1.4%	1.4%	1.4%
Wireless data	1.6%	1.6%	1.5%	1.5%	1.4%	1.4%	1.4%

[16] We note that revenue levels calculated at the nominal and real growth rates lead to the same market shares as the inflation rate subtracted from the nominal growth rate is the same across the economy for all the sectors.

Model Type U with scheme 3

Figure 22: Model Type U with Scheme 3: Contribution by Funding Segment (2016 - 2022):



Under this model, the contribution share of revenue is the same for all Funding Segments and remains constant throughout the modelled period.

Table 7: Model Type U with Scheme 3: Contribution shares of Funding Segments' revenue

	2016	2017	2018	2019	2020	2021	2022
BDUs	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
Residential Internet	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
Wireless data	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%

In this section we have presented three allocation schemes i.e. (i) gap reallocation (ii) gradual reallocation and (iii) market share-based reallocation, each with a lower and upper bound target (Model Type L and Model Type U respectively). All of these models adhere to the first three Guiding Principles (i.e. comprehensiveness, minimum funding level and dynamism). In the next section, we assess and compare the degree of their adherence to the remaining four guiding principles.

4. Model option evaluation

In this section, we assess the relative adherence of the models developed in previous section on the latter four Guiding Principles (note that by definition each option adheres to the first three Guiding Principles) as demonstrated in the table below.

Table 8: Summary model option evaluation

	Funding target:	**Inflation-based (Model Type L)**			**Segment growth-based (Model Type U)**		
	Allocation scheme:	Gap reallocation (Scheme 1)	Gradual reallocation (Scheme 2)	Market share reallocation (Scheme 3)	Gap reallocation (Scheme 1)	Gradual reallocation (Scheme 2)	Market share reallocation (Scheme 3)
Guiding principle	1. Comprehensiveness	By design, all models are comprehensive. Refer to 3.2					
	2. Minimum funding level	By design, all models achieve minimum target funding. Refer to 3.3					
	3. Dynamism	By design, all models allocate funds based on relative market shares. Refer to 3.4					
	4. Fairness	No	No	Yes	No	Somewhat	Yes
	5. Minimum growth impediment	Yes	Yes	Yes	Somewhat	Somewhat	Somewhat
	6. Pro-SME	All models can be adapted to be pro-SME. Refer to section 4.2					
	7. Impact on consumers	Driven by business decisions of firms operating in Funding Segments. Potential mitigation strategies discussed in section 4.3					

4.1. Fairness and sector contributions

Models with Scheme 3 (i.e. prepared under the market share-based reallocation modelling approach) best meet Guiding Principle 4, fairness. Under the gap reallocation modelling approach, the lower bound models that target inflation-based funding levels apply a disproportionately larger contribution requirement on BDUs, the segment of the distribution sector that is now in decline. The gradual reallocation of the Funding Segments' contribution requirement from BDUs to the other Funding Segments as reflected in the Scheme 2 allocation is also more consistent with the fairness principle.

Refer to the table below for a comparison of contribution requirements (shares of total Funding Segments' contribution) between Funding Segments on an annual basis, by model.

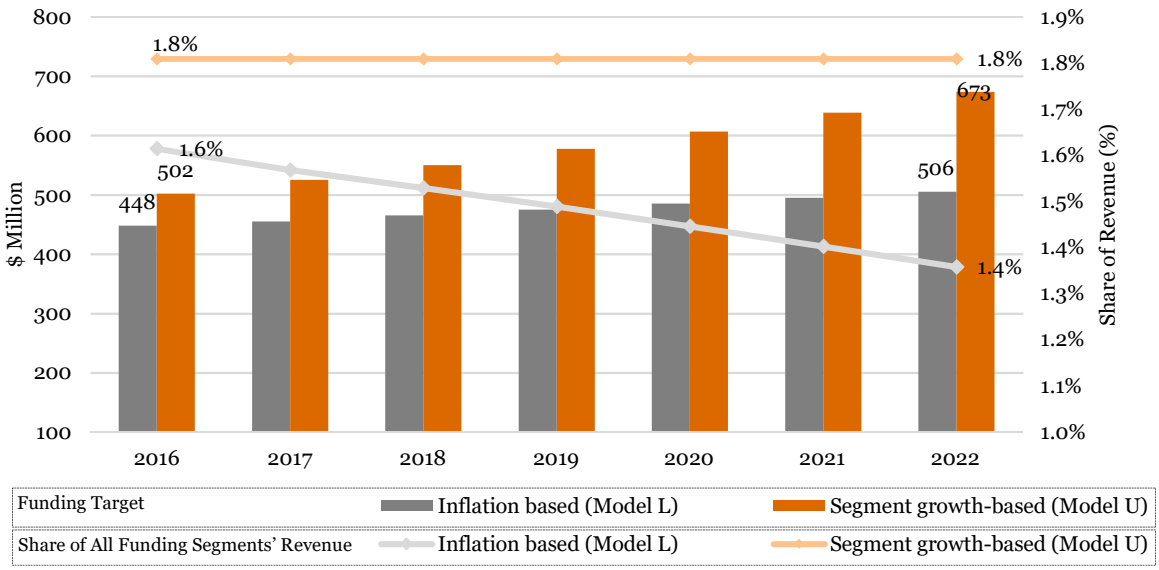
Table 9: Contribution framework options: Share of total contribution, by Funding Segment (2017 - 2022)

	Share in total contribution for three Funding Segments						Change over forecast period
	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2022 less 2017 (percentage points)**
Scheme 1: Gap reallocation							
Model L with Scheme 1							
BDUs	96%	94%	91%	89%	87%	85%	**-11**
Residential Internet	2%	3%	3%	4%	5%	5%	**3**
Wireless data	2%	4%	5%	7%	8%	10%	**8**
Model U with Scheme 1							
BDUs	83%	79%	75%	71%	68%	64%	**-19**
Residential Internet	7%	8%	9%	11%	11%	12%	**5**
Wireless data	10%	13%	15%	18%	21%	24%	**14**
Scheme 2: Gradual reallocation							
Model L with Scheme 2							
BDUs	78%	61%	48%	38%	29%	23%	**-55**
Residential Internet	9%	15%	20%	23%	25%	26%	**17**
Wireless data	13%	23%	32%	40%	46%	51%	**38**
Model U with Scheme 2							
BDUs	71%	57%	46%	36%	29%	23%	**-48**
Residential Internet	12%	17%	21%	23%	25%	26%	**14**
Wireless data	17%	26%	34%	40%	46%	51%	**34**
Scheme 3: Market share-based reallocation							
Model L & Model U with Scheme 3							
BDUs	30%	29%	27%	26%	24%	23%	**-7**
Residential Internet	29%	28%	28%	27%	27%	26%	**-3**
Wireless data	41%	43%	45%	47%	49%	51%	**10**

Under Model type L (inflation-based targets), the contribution requirement as a share of total Funding Segments' revenue will decline over time (from 1.6% in 2016 to 1.4% in 2022). Under Model type U (Segment growth-based targets), the contribution requirement as a share of total Funding Segments' share will remain constant at 1.8%. Model type L therefore imposes less of a contribution requirement on the Funding Segments' growth relative to Model type U frameworks.

The share of Funding Segments' revenue represented by the funding target along with the total funding values are depicted in the figure below for each model type.

Figure 23: Funding target and share of Funding Segments' revenue, by model type (2016 - 2022)



In terms of the allocation schemes under each model type, scheme 1 applies the greatest contribution requirement on the BDU sector, which has a declining revenue growth trajectory. This requirement is reduced under scheme 2 as BDUs' contribution levels commence at Scheme 1 levels before gradually achieving the market-shares based reallocation levels. Under scheme 3, the contribution requirement is distributed in line with the market shares at all times. Thus, Model L with scheme 3 best adheres to Minimum growth impediment guiding principle.

The Conference Board of Canada's 2018 Spring Outlook predicts that current telecommunication industry dynamics suggests that the scope for higher prices within the industry is minimal. Thus, all else being equal, any additional funding contributions from the wireless data and residential Internet Funding Segments would likely be absorbed by communications companies at the expense of profitability and/or investment growth.

4.1.1. Incentives for manipulation in reporting?

Under the existing contribution framework, the CRTC is able to obtain estimates for the revenue earned by integrated companies from the BDU Funding Segment. We understand that the CRTC currently utilizes two primary methods to validate data received from companies for the process of calculating their respective requisite funding contribution:

1. **Historical data** – The CRTC analyzes trends in historical revenue data received to detect anomalies ;

2. **Partnership with Statistics Canada and Canada Revenue Agency (CRA)** – As the companies accounting for majority of the telecommunications market share are publicly traded, the CRTC verifies the

reported data with tax documents filed with CRA and other financial information shared with Statistics Canada.

The assumption that the CRTC will be able to obtain accurate estimates for the revenue earned by integrated companies operating across all three Funding Segments (to the level of accuracy and specificity that they currently achieve for the BDU Funding Segment), has underpinned our approach to expanding new contribution framework model options to include the Wireless data and Residential Internet Funding Segments.

The scope for manipulation of reporting is relevant to the allocation schemes selected within either of the model types. We note that 'Scheme 3' creates the least incentives for manipulation as it applies the same contribution rate to all three Funding Segments. By doing so, companies derive no benefit from assigning a greater discount on a particular service in a bundle mix under the Scheme 3 model option.

As Scheme 1 and 2 allocation schemes apply different contribution rates across the Funding Segments, if reporting standards could be materially susceptible to data manipulation, this creates an incentive for a "gaming" of the framework through attributing more/less revenue to a specific item within bundled services to minimize the total contribution required. This would create a new obligation on companies that offer Wireless data and/or Residential Internet services only. If the same contribution rate is applied to all Funding Segments (as is the case in Scheme 3 models), the incentive to attribute more revenue in a bundle service to a specific service offering (and hence, Funding Segment) is eliminated.

4.2. Small and medium enterprises

Due to the perceived administrative costs of switching carriers and the number of bundled services that large communications firms offer, the choice of communication service providers is relatively resistant to change for most Canadian consumers. A relatively small number of vertically and horizontally integrated communications companies account for the vast majority of the sector's market share. There are however a number of specialized SMEs in the market offering niche services across the three Funding Segments involved in media content distribution in Canada.

Due to the competitive structure of the communications sector (i.e. a relatively small number of large firms controlling most of the market), and the willingness of consumers to pay a premium to the larger services providers, larger firms have been successful in securing higher Average Revenue Per User (ARPU) than SMEs.

As the model options developed are based on setting funding targets as a function of Funding Segment revenue, any targets and reallocation approaches could be adapted to attempt to limit the contribution requirement on SMEs. The first step would be the introduction of a mechanism for allocating the framework's contribution target by firm size (for each Funding Segment). One option could be to adjust the relative percentage contribution between the top and other firms based on the difference between the average revenue per user. Within each of the Funding Segments, the overall contribution could be allocated between the large communications companies (i.e. the 'Big 5' companies) and the remaining firms based on ARPU differentials (between the 'Big 5' companies and SMEs) to provide greater support to SMEs.[17] In order to do so, the greatest challenge is data availability. Due to the fragmented nature of the market at the lower end, it is difficult to objectively set a differential between the contribution shares of large firms and SMEs.

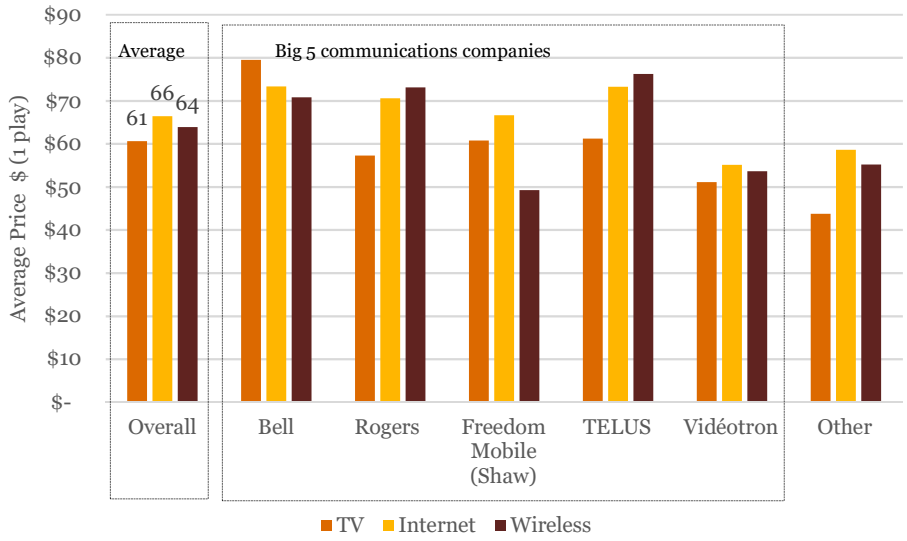
[17] For example, if the ARPU for Big 5 companies is $70 and that for SMEs is $35, then the ARPU ratio of SMEs to Big 5 is (1/2). If a Funding segment were to allocate 5% of revenues, then based on the relative ARPU ratio between SMEs and the Big 5, the SMEs contribution rate could be defined at 2.5% (5%/2). Based on relative revenues between Big 5 companies and SMEs, the contribution rate of Big 5 companies could be defined to meet the funding shortfall from SMEs' contribution and will be in excess of 5%.

Note that this is one of a number of potential approaches to using ARPUs to set different contribution rates for SMEs (relative to large firms).

4.3. Consumers and pricing

According to IDC's Consumer Survey 2018, the prices reported to be charged by the "Big 5" service providers for TV, Internet and Wireless services are generally higher than the average price charged by other companies offering these services.

Figure 24: Average price charged for standalone services, by service and provider



Source: IDC Consumer Survey, 2018

Close to 10 million Canadian households reported having subscriptions to "bundled" services with telecommunications companies, which allows for access across a combination of service offerings. Approximately 45% of the bundled market are made up of two play bundles including TV and Internet services. The remaining 55% of the bundled market are made up of bundle mixes that include a mix of TV, Internet and wireless services. The average price for these bundled services as well as their respective share of the bundled market, are shown below.

Table 10: Average price by bundle mix, across all income groups (2018)

Bundle mix	Average price	Share of bundled market
2 Play - Mobile / Internet	$ 224	7%
2 Play - TV / Internet	$ 147	45%
2 Play - Mobile / TV	$ 192	31%
3 Play - Mobile / Internet / TV	$ 212	16%

By Service provider, average bundled service prices are higher for "Big 5" providers, as is the case for individual services.

On average, most consumers choose bundled services to take advantage of the discounts from service providers for bundling services. However, the average prices paid for bundled services is slightly greater than the sum of prices of the individual services (averaging $61, $66, and $64 for TV, Internet and Wireless services respectively per Figure 24) as Canadian consumers may be:

- likely to subscribe to higher service levels when they bundle their services together as compared to those who choose standalone services; or

- likely to subscribe to standalone service to get the best or most suitable individual deal, which may disqualify them from bundled offerings of service providers but the individual deals may be providing them better overall deal.

Despite a higher average price, the 'Big 5' communications companies provide TV, Internet, and Wireless services to the vast majority of Canadian households with these services (90% for TV services, 77% for Internet and 76% for Wireless). While this saturation is prevalent across all household income ranges, as shown in the table below, lower income households are less likely to be customers of the 'Big 5' and more likely to be customers of SME providers.

Table 11: Service provider market share and average price charged, by service and household income range

	Household Income (HHI)					
	<35K	**35-50K**	**50-75K**	**75-100K**	**100K+**	**Average**
TV Service						
'Big 5'	89%	85%	91%	95%	92%	**90%**
Others	11%	15%	9%	5%	8%	**10%**
Average price	$62	$66	$69	$63	$74	**$68**
Internet						
'Big 5'	76%	69%	78%	82%	82%	**77%**
Others	24%	31%	22%	18%	18%	**23%**
Average price	$65	$64	$64	$65	$68	**$65**
Wireless						
'Big 5'	70%	74%	77%	78%	83%	**76%**
Others	30%	26%	23%	22%	17%	**24%**
Average price	$64	$59	$66	$71	$77	**$68**

Source: IDC Consumer Survey, 2018

The narrow range of average prices paid across different household income groups for these services suggest that there is limited price discrimination in the market.

According to standard economic theory, the current price strategy in the market is being driven by the following industry dynamics:

1. **Industry structure:** In Canada, the communication industry is characterized by economic theory as an "Oligopoly" structure i.e. small number interdependent firms dominate the market. According to standard economic theory, this industry structure can lead to 'stickiness' in prices. The theory predicts that when a rival firm increases its price, others will not follow but if a competing firm decreases its price then others will follow unless the firms engage in collusive behaviour.[18]

2. **Nature of the commodity**: Over time, Internet and Wireless services have moved from being perceived as a luxury good to a basic good. Basic goods are usually associated with demand being relatively inelastic to prices i.e. the number of subscribers are not expected to decline significantly with an increase in price.

3. **Service penetration**: More than 95% of households in Canada have access to Internet and Wireless services.[19] About 88% Canadians report to access internet on a daily basis while 8% report to access at least once a week. At this level of penetration in the market with a smaller number of providers providing a basic

[18] Ofcom, Summary of oligopolies roundtable held 8th February 2017, June 2017, UK
[19] https://www.statista.com/statistics/243808/number-of-internet-users-in-canada/

commodity, the firms have greater motivation and opportunity to keep prices high or increase price, without a significant decline in subscribers' base. In other words, there is limited incentive to decrease prices or even engage in price discrimination by income groups.[20]

4. **Switching costs and bundles**: Benefits such as one-bill convenience etc. encourages consumers to purchase all services from one provider. In addition, the switching cost in moving to a new provider such as time investment, equipment purchase, applications, etc. discourages consumers to switch consumers for a small increase in prices.

The above suggests that, all other things being equal, an increase in business costs resulting from the provision of additional funding may lead to a price increase. Over the past two decades, average consumer prices for communications services have slightly increased at a rate close to inflation[21]. However, we note that there are other factors at play that are likely to put downward pressure on prices. We note that, the Conference Board of Canada's 2018 Spring Outlook predicts that current industry dynamics does not lend itself to higher prices in the future. Canadian consumers have high debt-to-income ratio and cannot afford to absorb higher costs evidenced by them forgoing upgrades to newest technologies. In addition, there is an increased threat of competition from foreign or new domestic telecommunication companies. Thus, we expect that the scope to significantly increase prices in the market as a response to the implementation of a new contribution framework could be fairly limited.

In a sector with the above noted characteristics, the incentives of operators to engage in price discrimination are likely to diminish particularly with respect to low-cost offerings. OECD broadband statistics suggest that in Canada, low-cost options for telecommunications services tend to be relatively limited. The UN Broadband Commission (Broadband Commission for digital development) defines the affordability target threshold for communication services to be 5% of income.[22] As shown in the table below, Canada's lowest income households (less than $42,887) exceed this threshold.

Table 12: Share of communication expenditure, by household income

Average annual household income	**$19,403**	**$42,887**	**$68,331**	**$103,021**	**$210,693**
Communications expenditure as % of annual income	8.6%	5.0%	3.9%	2.9%	1.7%

Source: Household Expenditure Survey 2016, Statistics Canada

Lower income household groups face a higher pressure of communication expenditure on their total income than higher income Canadian households. Any pricing strategy to provide cheaper basic packages and more flexible choices targeted at this income segment would help address current affordability issues in the sector. As noted previously, consumers opt out of bundled offerings to choose lower service levels or to obtain discounts for more suitable deals. The provision of such service offerings help consumers address affordability issues. Thus, it is plausible to expect that the low-income households will benefit from such service offerings as opposed to bundles.

Under the 'Connecting Families' initiative, Innovation, Science and Economic Development (ISED) Canada has introduced high speed Internet service packages for $10 per month from participating ISPs for eligible Canadian families including low-income families.[23] The contribution framework can consider providing exemptions to revenue derived from such service offerings and target bundles.

By design, each of the model options developed are based on the revenue of relevant Funding Segments. Any impact on consumers arising from an increased contribution requirement on any of these Funding Segments depends on how individual businesses will choose to respond to this increased requirement.

[20] CRTC Literature Review: Affordability of communications services, March 2016

[21] Telecommunications Outlook 2018, Conference Board of Canada

[22] https://broadbandcommission.org/Documents/publications/wef2018.pdf

[23] https://www.ic.gc.ca/eic/site/111.nsf/eng/home

To minimize consumer impacts while at a minimum achieving lower bound inflation-based targets, any new contribution framework could theoretically target a higher funding level and provide exemptions to companies based on Funding Segments' revenue derived from affordable services provided to low-income households as a share of total revenue. There could however be difficulties in accurately identifying these revenue segments in practice. One possibility could be that regulatory authorities may clearly define a basic package at affordable rates (similar to that defined for TV services) for low-income household groups and allow the companies to deduct revenue earned from this package. A funding contribution framework that provides greater relief to SMEs (which are more likely on average to be providing services to lower income households), will implicitly provide greater relief to lower income consumers if any associated price increase is passed on to consumers.

Appendices

Appendix A: Limitations

This report and related analysis must be considered as a whole: Selecting only portions of the analysis or the factors considered by us, without considering all factors and analysis together, could create a misleading view of our findings. The preparation of our analysis is a complex process and is not necessarily susceptible to partial analysis or summary description. Any attempt to do so could lead to undue emphasis on any particular factor or analysis.

Data limitations: PwC has relied upon the completeness, accuracy, and fair presentation of all information and data obtained from secondary research and information provide by the CMPA, which were not audited or otherwise verified. The findings in this report are conditional upon such completeness, accuracy, and fair presentation, which have not been verified independently by PwC. Accordingly, we provide no opinion, attestation or other form of assurance with respect to the results of this study. Where the information or data provided was not sufficient to conduct the analysis that has been requested, we have made assumptions, as set out throughout the Report.

Use limitations: This report has been prepared solely for the use and benefit of, and pursuant to a client relationship exclusively with the CMPA. We understand that the CMPA may make our report publicly available upon its submission. The CMPA can release this report only in its entirety and any commentary or interpretation in relation to this report that the CMPA intends to release to the public either requires PwC's written consent or has to be clearly identified as the CMPA's own interpretation of the report. PwC accepts no duty of care, obligation or liability, if any, suffered by the CMPA or any third party as a result of an interpretation made by the CMPA of this report.

Further, no other person or entity shall place any reliance upon the accuracy or completeness of the statements made herein. In no event shall PwC have any liability for damages, costs or losses suffered by reason of any reliance upon the contents of this report by any person other than the CMPA.

Receipt of new data or facts: PwC reserves the right at its discretion to withdraw or make revisions to this report should we receive additional data or be made aware of facts existing at the date of the report that were not known to us when we prepared this report. The findings are as of December 2018 and PwC is under no obligation to advise any person of any change or matter brought to its attention after such date, which would affect our findings.

Appendix B: References

BMI Research (2018), Canada Telecommunications Report, Q3 2018 includes 5-year forecasts to 2022

Broadcasting Act (S.C. 1991, c. 11), Government of Canada. Accessed at https://laws-lois.justice.gc.ca/eng/acts/B-9.01/FullText.html

Canada Media Fund (2018), Industry Consultation 2018 – Focus Groups Presentation

Canadian Media Producers Association (2017), Memorandum Broadcasting Distribution – Highlights from the CRTC's Statistical and Financial Summary Reports

Canadian Media Producers Association (2017), Letter to Minister of Canadian Heritage, 'A new contribution framework in support of Canadian programming in a digital world'.

Canadian Radio-television and Telecommunications Commission (2017), Communications Monitoring Report, 2017. Accessed at https://crtc.gc.ca/eng/publications/reports/policymonitoring/2017/cmr.htm

Canadian Radio-television and Telecommunications Commission (2018), Harnessing Change: The Future of Programming Distribution in Canada, Accessed at https://crtc.gc.ca/eng/publications/s15/

Conference Board of Canada (2018), Telecommunications Spring Outlook 2018

Innovation, Science and Economic Development (ISED), 'Connecting Families' initiative, Government of Canada. https://www.ic.gc.ca/eic/site/111.nsf/eng/home

International Monetary Fund (IMF) World Economic Outlook Database October 2018. Inflation average consumer prices (percent change). Accessed at https://www.imf.org/external/pubs/ft/weo/2018/02/weodata/index.aspx

International Data Corporation (IDC) (2018), Wireless, Internet, TV and Over The Top (OTT) services, Consumer Survey

International Data Corporation (IDC) (2018), Canadian Consumer Survey Indicators 2018: Wireless, Internet, TV and OTT Video Services, Emily Taylor and Manish Nargas

Luu, C. (2016), "Strengthening competition in network sectors and the internal market in Canada", OECD Economics Department Working Papers, No. 1322, OECD Publishing, Paris. http://dx.doi.org/10.1787/5jlswbxnfdxs-en

McCarthy Tetrault (2008), Reinventing the Cultural Tool Kit: Canadian Content on New Media, A presentation to the CFTPA "Prime Time in Ottawa" Conference Westin Hotel, Ottawa, Peter S. Grant

Nordicity (2008), ISP/WSP New Media Broadcasting Content

Nordicity (2016), Price Comparison Study of Telecommunications Services in Canada and select foreign jurisdictions. Prepared for the Canadian Radio-television and Telecommunications Commission

OECD Broadband Statistics (2017), Broadband Portal. Accessed at http://www.oecd.org/sti/broadband/broadband-statistics-update.htm

Ofcom, Summary of oligopolies roundtable held 8th February 2017, June 2017, United Kingdom

PwC's Global Entertainment and Media Outlook 2018-2022. Accessed at https://www.pwc.com/gx/en/industries/tmt/media/outlook.html

Rajabiun R., Ellis D., Middleton C. (2016). Literature Review: Affordability of communications services, March 2016. Prepared for the Canadian Radio-television and Telecommunications Commission

Statistics Canada (2016), Household Expenditure Survey

Telecommunications Act (S.C. 1993, c. 38), Government of Canada. Accessed at https://laws-lois.justice.gc.ca/eng/acts/T-3.4/

Todd Spangler (2018), Netflix Confirms Tests of Cheaper, Mobile-Only Streaming Plans in Multiple Markets, Digital, Asia, Variety. Accessed at https://variety.com/2018/digital/news/netflix-mobile-only-streaming-pricing-test-1203030443/

UN Broadband Commission, Broadband Commission for Digital Development.

UN Broadband Commission, Broadband Commission for Sustainable Development. 2025 Targets: 'Connecting the other half'. https://broadbandcommission.org/Documents/publications/wef2018.pdf

Zhang J. (2017), Taxes, tariffs and trade costs under oligopoly, Thesis D. Phil Cardiff University

www.pwc.com/ca