# Building Bridges Through Innovation

How Public Service Media Create Social Cohesion and Diversity

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# Abstract

As our world is becoming increasingly divided at a societal level, it is imperative to identify and reinforce common values and identities that unite us, while celebrating what sets us apart. Public institutions, such as public service media (PSM), share the democratic responsibility in bridging the divide between these cultural and interest groups, most notably, in the creation of public value. As digital media consumption habits have evolved in society from linear TV and radio to on-demand media platforms, public service media are required to adapt with them in order to maintain relevancy and deliver public value. Public service media are thus confronted with the challenging position of creating services that pay attention to centripetal forces which create social cohesion and connection through services which are universally appreciated and relatable to society as a whole, and centrifugal forces which foster diversity and highlight the needs of the individual. Therefore, this research aims to answer the following question: *How can public service media in Canada and the Netherlands leverage digital technologies to create public value?* To address the research question, a qualitative comparative case study approach is applied, with seven interviews from digital and content strategists at both Canada's and the Netherlands' public service media institutions. Additionally, desk research is performed in the form of a thematic analysis of relevant company publications, news articles, press releases, and policy documents. Through the observation of these two units of analysis, findings show that, public service media use digital technologies as modern tools for distribution in order to deliver content that has value. Public service media with in-house algorithm capabilities are able to also foster social cohesion and diversity in encouraging citizens to engage with content outside of their community of interest, in diversified algorithms and recommendation systems. In leveraging certain technologies, such as platforms and machine learning, public service media are able to ensure that citizens receive diverse and relevant information to foster content and exposure diversity, democratic participation, and mutual understanding. In addition, platforms open the door for public service media to collaborate with members of marginalized communities to ensure that their voices are heard on a larger scale.

KEYWORDS: *Public Service Media, Public Value, Social Cohesion, Diversity, Digital Technology*

For my parents, for always supporting me. Thank you to my mom, for always encouraging me to follow my dreams and who was always there to listen. Thank you to my dad who dropped everything to make sure I was ok.

For Paul, who never gave up on me. Thank you for being my rock for the past year and for reminding me that everything always works out in the end.

For Jana and Linda, for being my family when I was so far away from mine. I wouldn't have been able to get through this year without you. Thank you, Jana, for our countless study sessions and for being the voice of reason. Thank you, Linda, for always listening and for reminding me that it's ok to take breaks.

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My interest in public service media manifested when I was young, auditioning for youth reporting programs at the Radio-Canada office in Vancouver, BC. While I may not have been selected, it opened my eyes to the journalistic process and the importance of public service media. Having grown up in such a multicultural corner of the world to immigrant parents while studying in French in the anglophone part of Canada, taught me about diversity and social cohesion before I fully understood what they meant. Now, having moved to the Netherlands, I witness these values from a new perspective and therefore I knew that this subject would be of great interest to me.

I would like to start off by thanking my thesis supervisor, Matthijs Leendertse for taking a chance on me and selecting me for this exciting research. Thank you for your excellent guidance throughout this entire process and for opening up your network to me to be able to interview passionate experts in the field of public service media in the Netherlands. Therefore, I would also like to thank the seven interviewees for taking the time to share their insights with me and introduce me to their world. Finally, I would like to congratulate my fellow students for the year we are just completing. Good luck in the future and I hope our paths will cross again.

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*"Public media is really about building bridges… and we believe that investments into public media… can hold us together" (Berry, 2018, 38:11).*

# 1. Introduction

As on-demand platforms and innovative media technologies have evolved in recent years, media consumption habits have transformed significantly and to remain relevant in the commercial market, traditional media corporations must adapt to these digital technologies (Tana et al., 2019, p. 15). For democratic institutions, such as public service media (PSM), these innovations are necessary to deliver quality programs and services in the public interest. As society grows increasingly fragmented, their mission of universality and diversity are of upmost importance (Nissen, 2006, pp. 22-23). Thus, it is important to understand the way that PSM innovate using digital technology in an effort to create public value, strengthen the bonds of society, and celebrate the diverse landscape in which they serve.

## 1.1.  Bridging Societal Divides

Given the rise of tensions that are ideological and political in nature, societies are becoming increasingly divided (Helbling & Jungkunz, 2019, p. 1204; Baldassarri & Page, 2021, p. 3). This polarization in particular has been recently exacerbated due to increases in migration, globalization, and unprecedented events, such as the COVID-19 pandemic (Zulfiqar et al., 2018, p. 192; Hambauer & Mays, 2017, p. 134; Jewett et al., 2021, p. 326). Therefore, it is imperative to reinforce the common values that identify and unite us, while recognizing and celebrating the diversity within societies. As a result, nations are struggling to find and maintain the common bonds that traditionally hold a population together, risking further fragmentation and isolation among communities (Wilson et al., 2020, p. 227). With this increase in societal divides, countries are, thus, required to delineate how they want to balance the cultural diversity of their population and the overall societal heterogeneity through assimilation tactics or through celebrating the population's cultural difference under one common national identity (Berray, 2019, pp. 142-143).

Public institutions, such as public service media, share the democratic responsibility in bridging the divide between these cultural and interest groups, most notably, in the creation of public value (Donders, 2019, pp.1011-1012; Moore, 1995, p. 20). Across Europe, public service media share the mandate of providing content and services that are universal, independent, excellent, diverse, accountable, and innovative (European Broadcasting Union, 2012, pp. 4-5). When considering the increasing polarization and fragmentation that is present across the world, it can be inferred that public service media are challenged in fulfilling their democratic role of providing universal content that unites society across the

entire country. On the other hand, with increases of globalization and migration, countries are becoming more culturally diverse, which can exacerbate these difficulties as PSM organizations must also represent multiculturalism within countries, (Zulfiqar et al., 2018, p. 192; Hambauer & Mays, 2017, p. 134). These organizations are thereby faced with balancing this social cohesion and diversity by producing and distributing quality content that highlights the unique differences present at the individual level, while reflecting society as a whole (Lowe, 2016, p. 18).  Along with this challenge PSM are being questioned on whether they are still relevant in today's digital landscape or whether private platforms can offer the same services (Tremblay, 2016, p. 192). As digital media consumption habits have evolved in society from linear TV and radio to on-demand media platforms, public service media are required to adapt with them to maintain relevancy (Tana et al., 2019, p. 15).

## 1.2.    Research Question

When understanding the foundations of public service media, there are two schools of thought. One perspective can be described as an outcome of market failure, providing a universally acceptable and renewable public good (Cunningham & Flew, 2015, p. 8; Armstrong & Weeds, 2005, p. 1). In other words, PSM are charged with providing services that cannot be provided by the private market (Donders, 2021, p. 39). However, with modern media technologies, public service media are questioned on whether they are still contributing to market failure with the ease of accessibility of online content of value presented by the private market (Cunningham & Flew, 2015, pp. 8-9). Davies (2004, p. 12) argues that valuable content is spread across multiple providers in the public market, thereby insisting that public service media continue to correct market failure by offering its value in a more centralized and accessible way. Additionally, public perception of PSM places them at a higher quality than other media institutions, reinforcing its role in society (Sehl, 2020, p. 364). On the other hand, when it comes to public service media, another perspective is that PSM undertakes a democratic role (Donders, 2019, pp.1011-1012). PSM are essential to foster and promote mutual trust and understanding through public participation not only between themselves and the citizens, but also within the public itself (Weiß, 2023, p. 96). Moreover, other academics recognize the role of public service media in strengthening the democratic process by providing societally valuable services that encourage citizens to be more involved in democratic conversations (Unterberger & Fuchs, 2021, pp. 19-20).

Digital innovation in public service media is also an area of study in which scholars research the ways that technology impact public broadcasting. According to Rebollal & Donders (2923, pp. 47-50), PSM have made significant advancements in four key areas: content development, public participation, organization reforms, and technology advancements, however it is through digitalization efforts that are most essential for the progress and upkeep of PSM. This includes innovations in platformization, social

media, algorithms, and artificial intelligence (AI) (Donders, 2019, pp.1011-1012; Hutchinson, 2015, p. 89; Sørensen & Hutchinson, 2018, p. 101; Jones et al., 2022, p. 1732). These technological advancements allow for PSM to maintain their relevance on an international stage.

In reviewing previous literature on the role of public service media and how these institutions innovate, a clear research gap emerges. There is little research surrounding PSM innovation being used to create public value. For example, Hutchinson (2015, p. 89) researches how social media can be utilized to incite public participation. Donders (2019, p. 1012), on the other hand, seeks to understand the impact of platforms on distribution strategies and the diversity of content. Sørensen and Hutchinson (2018, p. 103) analyze algorithms and how they can increase transparency and diversity in PSM. While public service media value and its technological innovations have been researched in depth separately, there have been little academic studies on the interplay of the two and how technology is directly used to create value overall. Additionally, case study research of specific public broadcasters has been conducted, but the focus is primarily on European countries (see Burkart & Leijonhufvud, 2019, p. 173; Fieiras-Ceide et al., 2022, p. 5; Lindeberg & Ala-Fossi, 2023, p. 153). There have been few comparative studies focused on cases of countries from different continents, pertaining to different media systems. Therefore, this research aims to answer the following question: *How can public service media in Canada and the Netherlands leverage digital technologies to create public value?*

To address this research question, a qualitative approach will be conducted. In addition, to understand which public values are created through technologies, it is imperative to understand the struggles that PSM are facing. As previously mentioned, there are centripetal forces that encourage society to be more cohesive and unified that are inherently at odds with centrifugal forces which seek to highlight diversity within societies (Szapáry, 2021, pp. 118-129). Therefore, the cohesive and diverseforces that drive a society together are essential to be researched. First, social cohesion has been researched extensively (Friedkin, 2004, p. 409; Stanley, 2003, p. 6; Mousa, 2020, p. 866; Scartascini, 2022, p. 8; Feinberg et al., 2020, p. 3; Ramón & Rojas-Torrijos, 2021, p. 932). However, due to its flexible definitions, it has been considered a quasi-concept (Bernard, 2002, p. 48). Moreover, social cohesion is a value that is particularly important for public service media to foster due to the increasing fragmentation of society (Helbling & Jungkunz, 2019, p. 1204). That being said, social cohesion continues to play an important role on the overall health of a nation and is effectively seen as a benefit to society (Schiefer & Van Der Noll, 2016, pp. 579-580). As social cohesion can be seen as a public value, it is interesting to research how public service media are creating this value, particularly through technology. Thus, the first sub-question is formulated as follows: *How can public service media in Canada and the Netherlands leverage digital technologies to create social cohesion?*

Second, when it comes to centripetal forces, it is imperative to also discuss its counterpart, centrifugal forces and therefore, diversity is also an important value for public service media as they share the responsibility of reflecting the population of the citizens they serve in their content (Horsti, 2010, pp. 155-56). This is particularly important for in countries with culturally diverse populations. Public broadcasters have always placed a high priority on diversity, but in the age of the internet and social isolation, celebrating diversity and recognizing the voices of marginalized communities is even more crucial since it provides citizens with a wider range of services as part of their mandate to provide public value (Horowitz & Nieminen, 2017, p. 104). Therefore, the second sub question was created as follows: *How can public service media in Canada and the Netherlands leverage digital technologies to create diversity?*

Finally, social cohesion and diversity, are inherently opposing. Public service media are continuously challenged with centripetal forces that seek to pull people together and centrifugal forces that force people apart (Szapáry, 2021, pp. 118-129). In focusing on services in favour of social cohesion, public service media are ultimately neglecting the needs of individual groups. Public broadcasters must therefore find a way to balance the needs of the individual and the needs of society as a whole (Sørensen, 2020, p. 195). To address this, the third sub question was developed: *How can public service media in Canada and the Netherlands leverage digital technologies to balance diversity and social cohesion?*

## 1.3. Societal & Academic Relevance

This research is societally relevant as public service media institutions can use the findings and conceptual model that will be outlined in Chapter 2 and 5 of this thesis to further their own public service remit. With the conceptual model, public broadcasters can operationalize their own innovative capabilities and draw inspiration from current innovative applications that will be outlined through theory. The significant findings of this research can be used as a benchmark for public media institutions to be able to compare their own findings. This way, public broadcasters are able to share innovation and research to strengthen the democratic processes in each of their countries.

Additionally, this research is academically relevant as it seeks to fill the gap in the literature that was previously delineated and contribute to academic discussion on how public service media can utilize digital technologies to further their societal remits. Since technology in media is consistently evolving, this research seeks to find the newest developments and provide meaningful academic contributions on how public service media are currently innovating. The subject of this thesis is interesting as it assesses whether or not public service media in Canada and the Netherlands are following innovative trends that present themselves through academic discussion.

## 1.4.   Outline of Thesis

This research strives to answer the research questions previously outlined. This will be achieved through a conceptual model that will be presented in Chapter 2 and will act as the foundation for this research. This model is organized into two dimensions (social cohesion and diversity) and outlines the strategies that public service media employ to create and foster these values. The role of public service media, public value, diversity, and social cohesion will be elaborated in Chapter 2, along with a theoretical explanation into how PSM utilize digital technologies to achieve them. This will be followed by Chapter 3 which offers an understanding and explanation to the methodological process of this thesis. To answer the research questions, a case study approach was selected due to the nature of the research question. Additionally, case studies are an apt method for harmonizing theory with empirical evidence (Zartman, 2011, p. 1). The methodology section will also outline the operationalization of this research in the form of a case study template which acts as a guide for gathering and analysis of all data. Chapter 4 of this thesis is organized using the same conceptual model and case study framework previously mentioned. It outlines the results through a thematic analysis of data gathered. The final chapter, Chapter 5, answers the research question and provides all discussion and conclusions. This thesis is subsequently concluded in an analysis of limitations, societal relevance, and suggestions of future research.

# 2. Theoretical Framework

This chapter aims to offer a comprehensive overview of the latest theories and debates on the balance of social cohesion and diversity in public service media. By exploring the current academic discussions, a conceptual framework is developed to anchor this research and to offer a structured approach to measure and analyze the empirical data collected.

## 2.1. Public Service Media

### 2.1.1. The Role of Public Service Media

The role of public service media in society is to, ultimately, serve the public (Urbániková, 2023, p.1352; McClean, 2008, p. 71). The European Broadcasting Union (2023, What is public service media? para. 1) defines PSM as "broadcasting made, financed and controlled by the public, for the public. Their output, whether it be TV, radio or digital, is designed to inform, educate, and entertain all audiences." Foundationally, the necessity for public broadcasting lies across two primary concerns. First, public service media seeks to offer what cannot be provided on the commercial market (Donders, 2021, p. 39). In other words, public media is the result of market failure, providing society with value that would be overlooked by private media companies (Cunningham & Flew, 2015, p. 8; Armstrong & Weeds, 2005, p. 1). Second, PSM undertakes a democratic role (Donders, 2019, pp.1011-1012) in fostering trust and public participation (Weiß, 2023, p. 96), to hold the government accountable, and to provide information to the population of a country (Weiß, 2023, p. 91; Schneiders et al., 2023, p. 123). With the role it plays in Western societies, public service media acts as a gateway to strengthen democracy and maintain social cohesion (Unterberger & Fuchs, 2021, pp. 19-20). Horsti and Hultén (2011, p. 211) further describe PSM as having two principal responsibilities: to foster national identity, and to provide services for every population in an equal manner.

In understanding the role that public service media have in society, it is imperative to understand the kind of value they provide the public. Across Europe, public broadcasters seek to deliver content and services that fall within their six core values: universality, independence, excellence, diversity, accountability, and innovation (European Broadcasting Union, 2012, pp. 4-5). As public service media are deemed providers of public value (Lowe & Martin, 2013, pp. 19-20), they hold an important role in creating and delivering content and services surrounding their six core values previously mentioned. Public value, or societal elements that the public values, was first introduced by Moore (1995, p. 27), where it was contextualized in the lens of public management and government, describing that the public sector is responsible for public value (Moore, 1995, p. 20). Public value is thereby defined not only in the

sense of what the public values, but also what is beneficial to the public sphere (Benington, 2009, p. 233). In other words, societal elements that act in the wider public interest.

While each of the values that public service media offers are important to the overall function of society, two stand out as somewhat contradictory. On one hand, there is universalism. This can be looked at in two ways, content and distribution (Lowe & Savage, 2020, p. 12). In other words, the content created by public service media must be relatable to society as a whole and reflect the homogeneity of society and ensure that reach and access are universally achievable. Diversity, on the other hand, refers to representing and celebrating each individual group, especially within multicultural societies (Titley, 2014, p. 247). Public service media are thus confronted with the challenging position of creating services that pay attention to centripetal forces which create cohesion and connection through services which are universally appreciated and relatable to society as a whole, and centrifugal forces which foster and highlight the needs of the individual (Lowe & Savage, 2020, p. 21; Sørensen, 2020, p. 195; Szapáry, 2021, pp. 118-129).

As Nissen (2006, p. 21) elaborates on these core objectives of public service media, highlighting their role in providing for individual needs, representing the various cultures and diversity of the population, and fostering social cohesion. These functions emphasize the complex nature of public service media: reflecting the diversity of the individual while promoting the cohesion of society as a whole (Sørensen, 2020, p. 195). While diversity requires programming and services that represents the various groups within a population, social cohesion seeks to unite this diverse content, which can sometimes lead to contradictions in content delivery and audience reach (Nissen, 2006, p. 28). In this context, the effectiveness of public service media is measured by its ability not only to provide culturally specific content that appeals to different audiences, but also to create a shared space where communities can be formed, enhancing societal bonds.

Public service media is questioned on whether they are still relevant in today's online market (Tremblay, 2016, p. 192; European Commission et al., 2022, p. 47) as there is ongoing debate on whether public service media are still correcting market failure or if these values can be delivered through the private market due to the popularization of on-demand streaming platforms, such as Netflix or Spotify (Tremblay, 2016, p. 192). Therefore. In response to these concerns, public broadcasters are required to innovate to compete with these large media companies on an international stage and to maintain their role as provider of public value (Cunningham, 2015, p. 204).

### 2.1.2.　　　From PSB to PSM

Amidst recent technological advancements, public service broadcasting (PSB) have evolved to provide services outside of the traditional radio and television to expand their media capabilities (Nielsen, 2010, pp. 121-128). This transformation, sparked by an evolution in media consumption habits, has prompted broadcasters to adopt innovative technologies, transitioning public service media, to fulfill developing digital obligations (Nielsen, 2010, pp. 121-128). With the advent of the Internet, PSB's were suddenly forced to diversify their services given the newfound competition into PSM (Collins, 2007, 164-165), developing streaming platforms, podcasts, social media, and other digital innovations.

While PSM may be at risk in certain countries, there is still a consensus that PSM provides services at a higher quality than its private counterparts, further solidifying their role in society (Sehl, 2020, p. 364). Also, PSM offers a centralized institution for diverse populations to access services catered to them, which is less achievable in the private market. Thus, in their effort to "inform, educate, and entertain," (European Broadcasting Union, 2023, What is public service media? para. 1) public service media use innovation to deliver on their public value remit (Tremblay, 2016, p. 199).

Rebollal & Donders (2023, pp. 47-50) identify four main areas where PSM have made significant innovations: technological advancements, content creation, public participation, and organizational changes. Among these, digitization and technological evolutions are pivotal for the advancement and maintenance of PSM (Rebollal & Donders, 2023, p. 47). Such innovations have taken various forms, including the integration of social media, personalized content, artificial intelligence, and platform-based distribution (Van Dijck & Poell, 2014, pp. 148-149; Donders, 2019, p. 1013; Jones et al., 2022, p. 1732; Schwarz, 2015, p. 126). These advancements facilitate access to a broader and more diverse audience-base, ensuring that the content provided is both inclusive and reflects societal heterogeneity. This reach is essential in fostering social cohesion.

## 2.2.　Social Cohesion

In general, social cohesion is perceived as an appealing aspect of society (Schiefer & Van Der Noll, 2016, pp. 579-580).  Social cohesion, a concept extensively researched across various fields and is complicated in its definitions (Friedkin, 2004, p. 409; Stanley, 2003, p. 6; Mousa, 2020, p. 866; Scartascini, 2022, p. 8) Maxwell (1996, p. 13) defines social cohesion as the foundation of common values, while ensuring equality amongst classes and the fostering of community. Moreover, Chan et al. (2006, p. 290) have another definition, stating that social cohesion is related to both "vertical and horizontal interactions among members of society as characterized by a set of attitudes and norms among

members of society that includes trust, a sense of belonging, and the willingness to participate and help, as well as their behavioural manifestations."

In the context of public service media, social cohesion takes on particular significance. PSM operate with a double mandate of reflecting the nation's diverse citizens (centrifugal) and simultaneously creating a unified public narrative (centripetal), an inherent tension that exists within social cohesion itself (Lowe & Savage, 2020, p. 21). This tension is echoed by Bernard (2002, p. 48) who labels social cohesion as a "quasi-concept" due to its flexibility and broad applicability, which can dilute its stability as a scholarly concept. The challenge is for PSM to navigate these critiques by fostering an inclusive media environment that enhances social cohesion without sacrificing the diversity of the communities it serves.

Schiefer & van der Noll (2016, p. 585) propose a framework that outlines the six dimensions of social cohesion which includes the relationship between citizens, community, a sense of responsibility for the greater good, values that are shared, equal opportunity, and standard of living. These six dimensions are integral to PSM's mandate to serve in the public interest. This is particularly important given the fact that in a world where polarization is rampant due to increasing globalization, unifying aspects of society are essential to preserve cohesion (Zulfiqar et al., 2018, p. 192). For public service media, promoting and fostering a unified society has a variety of benefits for the overall community.

Public service media are able to increase social cohesion through creating cultural citizenship, which refers to the idea within social inclusion where the population feels unified and proud towards the country they are in (Lithman, 2010, pp. 488-489). This, however, is difficult in countries where there is a high level of migration and globalization, as newcomers often are still attached to their home country, and complete integration into a new country is difficult (Lithman, 2010, p. 489). Public service media are also entrusted with the obligation to distribute content that is relatable with and is accessible to everyone in a society (Hawkins, 2009, pp. 26-27). It is in this area where public service media have to pay special attention to fostering social cohesion, while celebrating the diversity of the various communities that they serve. Feinberg et al. (2020, pp. 17-18) argue that trust and social cohesion can also occur when smaller groups participate in collective action. Through digital technologies, PSM in its essence offer opportunities for participation across its audiences, further supporting community building (Hutchinson, 2015, p. 98). This is particularly seen through online spaces for major community and cultural events that unite the population such as major sporting events, and national competitions, such as Eurovision (Ramón & Rojas-Torrijos, 2021, p. 932). Community building is thus based on collective group participation that ultimately produces trust and mutual tolerance within a society.

Another dimension of social cohesion is the reduction of disparities (Maxwell, 1996, p. 13). Which involves the divides and inequalities that are present within a society across social, economic, and regional dimensions (Berger-Schmitt, 2002, p. 406). These disparities can significantly fracture a unified society, creating divisions and fostering a sense of exclusion across marginalized communities. Public service media can address and potentially mitigate these inequalities by ensuring equitable access to information and facilitating inclusive participation (Hutchinson, 2015, p. 98).  However, to be able to achieve these cohesive objectives in society, public service media must use innovative techniques.

## 2.3.    Using Innovation to Foster Social Cohesion

### 2.3.1.    Algorithms

Algorithms can be used by public service media to foster social cohesion in a variety of ways. Recommendation algorithms, or machine learning software that recognizes the interests of the audience to promote more of that content, are an effective way for media institutions to distribute their content (Hildén, 2021 p. 777; Sørensen & Hutchinson, 2018, p. 93). Unlike private platforms that use content-based recommendations to maximize their returns, public service media face a unique challenge (Sørensen & Hutchinson, 2018, p. 101). They must balance economic considerations with their mandate to deliver content that fulfills their public value remit, which might not always align with what is most popular (Hildén, 2021 p. 787). To address this, many public broadcasters either adapt existing algorithms or create their own (Hildén, 2021 p. 787).

To foster mutual understanding between communities, some public broadcasters in Europe are leading the way with collaborative filtering techniques, such as the PEACH diversified algorithm, to broaden their distribution (Karimi et al., 2018, p. 1206; Hildén, 2021 p. 789). This approach incorporates the PSM remit into the recommendation systems, suggesting content that spans beyond users' primary interests (Sørensen & Hutchinson, 2018, p. 99). While this may decrease overall views, it encourages exposure to and appreciation of diverse viewpoints, thereby fostering mutual knowledge and understanding while strengthening social ties (Matema & Kariuki, 2022, p. 7). Additionally, using algorithms can gather data on the media consumption habits of people across a large geographical location, offering insights to what interests them, enabling PSM to understand the areas that interest their population to connect them (Rawlins, 2008, p. 1).

 Another way that algorithms can foster public participation and trust is through conversational chatbots. This technology allows for PSM to use AI and algorithms to speak directly with the population, offering them recommendations and responding to their questions about the news. Through this innovation, PSMs are creating new forms of public participation (Jones & Jones, 2019, p. 1036). While

some PSM, such as the British Broadcasting Corporation (BBC) are utilizing chatbots solely for the distribution of their content and less for striking meaningful conversation and inciting public participation, there are certain broadcasters that are innovating in this field (Jones & Jones, 2019, p. 1049). For example, Australia's Broadcasting Corporation (ABC) used algorithms to create a chatbot to offer personalized recommendations for the user in collaboration with Facebook Messenger (Sørensen & Hutchinson, 2018, p. 94). This algorithm was created including the audiences' opinions to remove the black box of algorithms and increase transparency and uses machine-learning to be able to respond to questions regarding important values of public service media, including openness, reliability, and credibility (Sørensen & Hutchinson, 2018, p. 98). Since trust is an important dimension of social cohesion, increasing transparency within technologies incites a healthier relationship between society and the public service while also increasing public participation.

## 2.3.2.　　Digital Collaborations with Third-Party Platforms

This leads to another way that public service media are utilizing digital technologies to enhance social cohesion. Similarly to how ABC was collaborating with Facebook Messenger, partnerships with established platforms in the commercial market are a way for PSM to increase their visibility and to reduce competition (Burkart & Leijonhufvud, 2019, p. 173). This is particularly beneficial to smaller public broadcasters that are unable to create their own public algorithms to recommend their content or that have to compete with larger platforms (Yadlin & Klein-Shagrir, 2024, p. 174). In a society where audience groups are becoming more and more fragmented, utilizing the services that already dominate the market is an effective way to continue to offer their content to a wider audience (Lindeberg & Ala-Fossi, 2023, pp. 162-163). This ensures that broadcasters have a large reach to be able to offer cultural content that represents society as a whole and enhance the societal common identity (Kyianytsia, 2022, p. 65). Although relying on third-party platforms implies relinquishing control over their algorithms, in simply being present on highly trafficked media platforms, public service media are able to bring value to these sites and can also be seen as a marketing technique to push citizens to their own services.

Online audio broadcasting is an example of this (Lindeberg & Ala-Fossi, 2023, p. 163). Public broadcasters have recognized that engagement on linear radio broadcasting is declining and in response, institutions such as Finland's Yleisradion (Yle) or Sweden's Swedish Radio (SR) have become more listener-centric (Lindeberg & Ala-Fossi, 2023, p. 163). In doing so, their audio content is able to be consumed on-demand, giving their audience the flexibility to access programming anytime and anywhere. In connecting with the larger reach of external platforms, PSM are leveraging this flexibility to deliver content that is socially relevant and fulfills their responsibilities. SR for example, leveraged the popularity of a third-party platform (Sweden's Spotify) to collaborate with them to create the "Spotification of public

service media" and utilize their larger platform to distribute important musical and cultural content (Burkart & Leijonhufvud, 2019, p. 173). In partnering with third-party platforms, public service media can increase the accessibility of their content and engages audiences that they may not have had otherwise to deliver societally relevant programming.

### 2.3.3.        Increasing Participation Through Social Networks

Another way to utilize external platforms is not to directly collaborate with them, but to use them as an expansion of their distribution strategy and to create conversations around the content. This is particularly achievable using social media. Social media has been proven to foster social cohesion as it offers its users a sense of community as well as the opportunity to exchange meaningful discussion amongst people with the same interests and acts as the best platform for minority groups to communicate (Stieglitz & Roß, 2022, pp. 105-106).  On the other hand, social media can also harm social cohesion in the sense that it can polarize users, particularly around radicalized content and viewpoints (Stieglitz & Roß, 2022, pp. 105-106). However, with online content moderation, PSM can foster safe spaces for healthy discussion (Ammari et al., 2022, p. 22) Overall, social media is used by public service media to foster discussion, cultural citizenship, and mutual tolerance amongst the population.

To transition the conversations instigated through linear television content, PSM's use social TV, or where social media and television are combined (Hutchinson, 2015, pp. 89-90). The British Broadcasting Corporation (BBC) use this in their programming, launching their Up for Hire live event where the hosts interact with both a live studio audience and with commenters on social media (Van Dijck & Poell, 2014, p. 155). In doing so, the BBC were able to unite individuals from across the country and give them a sense of inclusion and participation. This type of participation online also incites cultural citizenship and mutual tolerance. When public service media create a place for discussion about large cultural events such as sports or nation-wide events such as Eurovision or the Olympics, individuals are able to create healthy discussion and bond over their mutual love for the event (Ramón & Rojas-Torrijos, 2021, p. 920).

### 2.3.4.        Technology-Enabled Accessibility to Reduce Disparities

Ensuring equitable access to public service media is imperative to reduce inequalities and disparities (Hutchinson, 2015, p. 98). As public service media have expanded their reach using technology, digital innovation has led to more accessibility (Trappel, 2008, p. 314).. While accessibility in terms of enabling those with disabilities is vital, accessibility of public service media can also be measured through the ability to access, the personalization of, and the comprehension and usability of content (Kablan et al., 2015, p. 396; Csontos & Heckl, 2020, p. 139).

Comprehension and usability are elements of accessibility that are particularly salient amongst diverse nations (Kablan et al., 2015; Csontos & Heckl, 2020). Technology allows for public service media to increase the usability of their services, with tools such as subtitles, translations, interpretation, and text-to-speech (Csontos & Heckl, 2020, p. 139; García-Prieto et al., 2022, p. 121). By ensuring that everyone can access the content provided by public service media, prejudices are reduced and individuals that may have disabilities or trouble accessing the services feel more included and can contribute more to the democratic conversations facilitated by public broadcasters (Soetemans & Jackson, 2021, p. 198). In offering content in a consumable format for all individuals, public service media are able to fulfill their mandates for universality.

## 2.4.  Diversity

In diverse nations, public service media have the responsibility of reflecting this diversity through their products and services, ensuring that all cultural groups within the society feel included and represented (Horsti, 2010, pp. 155-156). Diversity in relation to cultural pluralism can be defined as the experience of multiple people belonging to a variety of cultural backgrounds existing together in one area (Mazurkiewicz, 2020, p. 230). Nonetheless, diversity extends well beyond cultural and social backgrounds. Media pluralism is widely accepted as a core value of democracy and "implies that citizens have access to a wide array of information as a precondition for their best participation in the democratic debate" (European Commission et al., 2022, p. 18). Diversity has always been a key issue for public broadcasters, yet in the times of digital technologies, diversity is even more important, offering audiences with a variety of services as part of their public service remit (Horowitz & Nieminen, 2017, p. 104).

For public broadcasters and media studies, diversity has several dimensions, including the diversity of sources, content, and exposure (Napoli 1997, p. 60). Napoli (2011, p. 247) describes source diversity as "the extent to which the media system is populated by a diverse array of content providers." In other words, source diversity is crucial in media consumption as it ensures that consumers have a variety of information. Closely related to source diversity, content diversity refers to the representations within media (Napoli, 2011, p. 47). This includes creating a variety of content and genres that not only represent the cultural and demographic diversity within the population, but also the diversity of opinions or thought (Roessler, 2007, pp. 466-468). Current discourse surrounding content diversity and more specifically, cultural diversity, in public service media leads to the construction of cultural citizenship, but this can be challenging in multicultural societies when individuals subscribe to multiple national identities especially since there has been a shift in PSM from multiculturalism to cultural diversity, a vaguer term (Ramón & Rojas-Torrijos, 2021, p. 932; Horsti and Hultén, 2011, p. 211). In Europe, PSM serves as a

defender of cultural tolerance and integrating all communities and thus is detrimental to society (Council of Europe, 2009, p. 11).

However, content diversity also relates to the diversity of opinion (Napoli, 2011, pp. 247-248). This is a particularly contentious issue currently as society is becoming more and more divided through the polarization of opinions (Koudenburg & Kashima, 2021, p. 1081). Bos et al., (2016, p. 1) research the concept of "political selective exposure" where individuals tend to gravitate towards content that supports their ideological opinions. In producing politically selective content, media institutions are at risk of polarization (Bos et al., 2016, p. 2). PSM thus have to ensure that the content they produce not only represents a variety of opinions, but also that these diverse opinions are distributed in a diverse way, negating the creation of filter bubbles.

This leads to exposure diversity, which can be defined as "the extent to which audiences consume a diverse array of content" (Napoli, 2011, p. 248). Public service media face the struggle of exposure diversity, in which, in terms of representation, how to deliver it and how often while competing with the private market (Helberger, 2015, p. 1324). With radio and television, content had to be segmented, but in the age of the Internet, an unlimited amount of content can be consumed simultaneously. Thus, through technologies such as personalization in the form of artificial intelligence or algorithms, public service media are able to create content for all demographics within their reach (Helberger, 2015, p. 1324). With diversity and distinctiveness as core values of public service media, broadcasters must find a way to maintain these dimensions in a digital society (European Broadcasting Union, 2012, pp. 4-5; Sørensen & Hutchinson, 2018, p. 94).

## 2.5. Using Innovation to Support Diversity

### 2.5.1. Diversified Algorithms

Public service recommender systems, or algorithms, effectively curate and personalize content, ensuring that it appeals to diverse groups (Hildén, 2021 p. 787). This not only enhances the opportunity to offer content that the individual and those around them are interested in, but also fosters discussion and builds community around the shared content (Helberger, 2019, p. 1004). Regular algorithms, however, do not always offer exposure diversity and thus must be adapted by PSM into diversified algorithms (Hildén, 2021 p. 787). However, tailoring algorithms to cater to individual preferences and communities risks creating filter bubbles, particularly in distributing the news (Sehl & Eder, 2023, p. 325). Such systems may reinforce confirmation biases by presenting content that only represents user's interests and views, potentially undermining a comprehensive understanding of diverse perspectives (Pariser, 2011, p. 7). Hyper personalized algorithms can also be detrimental to marginalized communities as they can become

further isolated, and their perspectives are not being promoted. This focus on personalization can challenge the democratic role of media and erode social cohesion by promoting societal fragmentation and polarization (Helberger, 2019, p. 1004; Pariser, 2011, p. 7). Therefore, it is important for public service media to create algorithms that not only engage the consumer by presenting relevant content, but also expanding their interests by recommending content outside of their community of interest.

Distribution is a primary factor in media accessibility (Donders, 2019, p. 3). Since public service media shifted their services online, distribution is no longer constrained to time slots on radio or television. Online services have opened the doors for media accessibility as now anyone with internet access is able to consume media (Trappel, 2008, p. 314). In public service media, the way content is distributed has evolved to include platforms, websites, and even virtual reality (Donders, 2019, p.3). This supports public service media's goal to increase diversity through exposing people to their content in a variety of ways. Thus, in prioritizing exposure diversity, public service media create algorithms that are programmed to offer the audience more diversified content.

### 2.5.2.    Online Spaces for Marginalized Communities

Although public broadcasters utilize social media to incite public participation, it can also be used to create online spaces for marginalized communities to find each other and interact. Social media acts as another platform in which public service media can promote their diverse content and in doing so, can create connections and communication online within marginalized groups (Kavoura, 2014, pp. 98-99). Burton (2020, p. 911) argues that online spaces through social media platforms can work as effective tools to connect members of marginalized communities, encouraging them to organize and push for their rights and inclusion in society. For public service media, creating safe online spaces for diverse groups highlights their mission for creating democratic engagement and fostering public discourse to allow for groups to express their specific needs and issues (Fuchs, 2014, p. 73).

One example is Curious City, a radio series by WBEZ Chicago public service media where audience members from underrepresented communities are able to participate in the journalistic process utilizing offline and online outreach tactics, such as social media (Wenzel, 2017, p. 14). This resulted in connecting with groups to be able to tell their own stories with more participation and to create stronger storytelling bonds, thereby increasing source and content diversity (Wenzel, 2017, p. 14). However, another way for PSM to create meaningful and diverse conversations online is to tailor their social media strategy to promote more diverse content (Rojas-Torrijos & Ramón, 2021, p. 229). In promoting diverse content, the audience will also diversify, fostering diversity of opinion. In diversifying public discourse, public broadcasters can extend their reach to more communities.

### 2.5.3.        Ethnic and Linguistic Community Broadcasting

For many years, ethnic community broadcasting has been a part of public service media (Bear, 1980, p. 25). Linguistic and cultural minorities were able to consume content in their native language through TV and radio. With technological advancements and platformization, this content can be distributed online and on-demand (Jia, 2023, p. 67). Ethnic and linguistic community broadcasting is an effective way to showcase the voices of underrepresented groups while ensuring linguistic preservation (Yu, 2016, p. 1310). While ethnic community broadcasting promotes finding communities within smaller groups, it does not support the heterogeneity of society.

Public service media have been collaborating more and more with local groups to create diverse and cultural content for ethnic groups online (Wenzel, 2023, p. 2633). This collaboration primarily aims at fostering engagement and representation of multicultural communities. Source diversity and participation are thereby created by collaborating directly and spotlighting with marginalized communities (Wenzel, 2023, p. 2640). Through online platforms, these partnerships can then be promoted to ensure it reaches not only the audience within the underrepresented group but also a diversity of people, but also to showcase it to other groups, fostering mutual understanding and community.

Public service media are complementing their radio content with online audio formats such as podcasts so that listeners can listen live or on-demand (Aufderheide et al., 2020, p. 1684). This shift to public podcasting allows for a platform for deeper engagement with topics that may not receive sufficient coverage in in linear media (Harris, 2019, p. 16). In an effort to stay relevant in the digital sphere, podcasts are being adopted, allowing for more content distribution (Aufderheide et al., 2020, p. 1684). Thus, the traditional ethnic community radio that is present across many countries is being adapted to podcasts, to continue to offer the services in a more digital and relevant way.

## 2.6.   Conceptual Model

It can, thus, be concluded that digital technologies are used by public service media in a variety of ways to foster both social cohesion and diversity. This is illustrated in the following conceptual model in Figure 1.

**Figure 1**

Conceptual Model
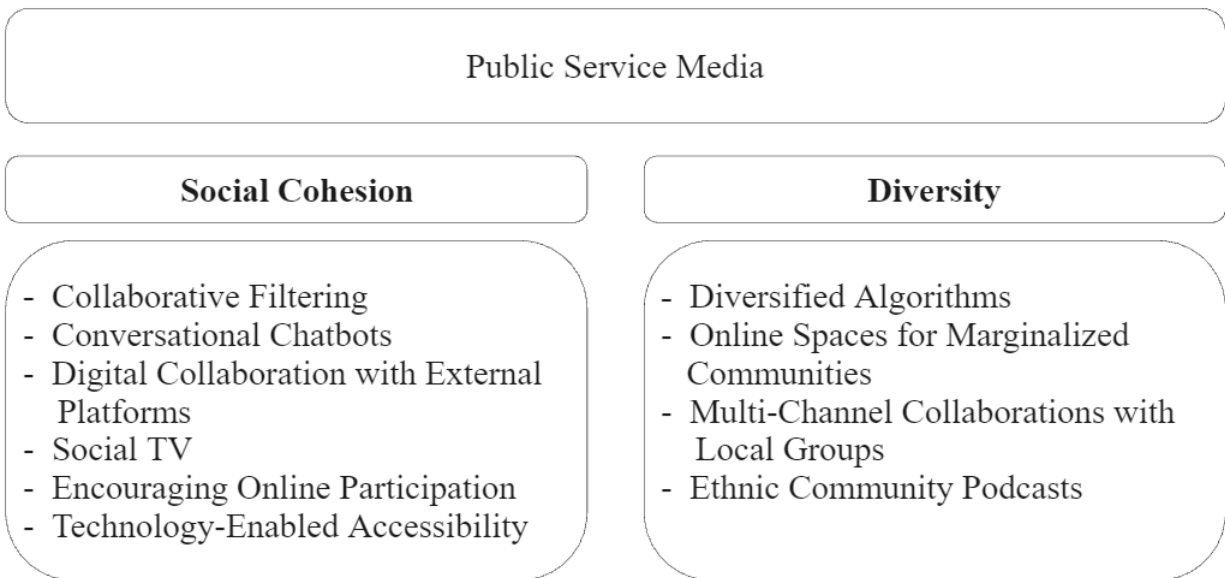
# 3. Methodology

The purpose of this section is to give an overview of the research methods employed to conduct this research. This chapter begins with understanding the qualitative method approach of case study research, followed by an overview of the selected cases, their reasoning, and the data collection methods. To continue, the units of analysis and operationalization are outlined concluding with the data analysis strategy and mention of research ethics.

## 3.1. Qualitative Approach

To address the research question regarding how public service media in Canada and the Netherlands leverage digital technologies to create public value, a qualitative method will be applied. This approach is most appropriate as qualitative research is "political and theoretical in nature," offering the researcher the tools they need to understand the intricate workings of society (Brennen, 2021, p. 4). While quantitative research offers a robust and specific examination of data, this research strives to understand nuanced topics in PSM which are not quantifiable, and thus, a qualitative approach is most appropriate as it implies analyzing the data in a more abstract, systematic, and flexible manner (Brennen, 2021, p. 3; Flick, 2014, p. 170). Therefore, a qualitative analysis is ideal to best to understand how public service media in Canada and the Netherlands are currently using digital technology to create public value. Due to the nature of the data collected, a qualitative thematic analysis is employed, which will be elaborated upon later. This research requires an in-depth examination of findings from interviews and documents surrounding diversity and social cohesion in PSM through the lens of the theoretical concepts discussed in the previous chapter.

As outlined by Brennen (2021, p. 5), researchers who employ qualitative methods typically use multiple methodologies in their work, depending on what question is being asked. In understanding the question that is at hand, it is evident that a case study approach is most appropriate. According to Yin (2018, pp. 43-44), a comparative case study is to be employed following three criteria: the research has the aim of understanding a specific situation (in using a 'how' question), the researcher does not have control over the behavioural outcomes, and it is not a historical study. Additionally, "case studies are the best way of combining empirical data with theory" (Zartman, 2011, p. 1). Following Yin's (2018, p. 96) framework, this research will follow a multiple- (Canada and the Netherlands) -holistic (single unit of analysis) case study design.

## 3.2.    Research Design: Comparative Case Study

Yin (1992, p. 121) describes the case study as an instrument for evaluation. The aim of a case study is to "explore and depict a setting with a view to advancing understanding of it" (Cousin, 2005, pp. 421-422). As it involves understanding where cases converge and differ, this research will employ the comparative case study approach (Goodrick, 2020, p. 1). Through the lens of a common framework, comparative case studies observe a situation from multiple angles (Agranoff & Radin, 1991, p. 204). This is achieved through the integration of multiple forms of data collected through strategies such as field observations, interviews, and documents (Agranoff & Radin, 1991. p. 209). To analyze the data collected, in case study research, a template must first be developed, contextualized through the conceptual framework developed through an extensive literature review, in which the cases are analyzed independently, and the results thereby compared (Agranoff & Radin, 1991, p. 209-210). To operationalize the primary research areas of this thesis, the concepts of public value and how they are fostered through digital technologies by PSM are incorporated into the case study template. This is further elaborated below. However, it is essential to first understand the advantages and shortcomings of case studies, to better utilize them for this research.

The case study methodology has many advantages. It is a respected research method that can be applied to both quantitative and qualitative studies useful for explaining the "understanding and change of interwoven complexities" (Cronin, 2014, p. 20) that are not able to be quantified through quantitative research (Zainal, 2007, p. 4). Additionally, case studies allow for the research to be done within its regular context (Yin, 2018, p. 50). Observing the subject in its natural environment serves to offer more detailed results and a better understanding of their normal behaviours (Yin, 2018, p. 50). This is useful in the context of this research as an in-depth analysis of interview transcripts and documents describing how PSM utilize certain technologies are used to observe real-life scenarios in which public value is created. In addition, since this research focuses on both Canada and the Netherlands, in analyzing multiple cases, the outcome of the data is stronger and more dependable as more cases are being analyzed (Baxter & Jack, 2015, p. 552).

On the other hand, there are also some drawbacks to the case study. Flyvbjerg (2006, p. 221) brings forward common misconceptions of case study research. Firstly, they indicate that practical knowledge is less useful than theoretical knowledge (Flyvbjerg, 2006, p. 221). In the context of this research, theoretical knowledge can guide understanding of how public service media are utilizing digital technologies to create public value, but without speaking directly with specialists or observing what is currently happening, case-specificity is not achievable. Second, generalizability from a single case is not possible (Flyvbjerg, 2006, p. 221). While this research observes not one, but multiple cases, more robust

data is collected, offering a better understanding of more cases, performing generalizability to a certain extent (Baxter & Jack, 2015, p. 552). Finally, case studies are more likely to confirm a researcher's bias (Flyvbjerg, 2006, p. 221). As will be discussed further in this chapter, triangulation is employed to offer a holistic view of the issue at hand, removing the possibility of preconceived notions playing a role in the analysis. Overall, these limitations, while important to keep in mind, are not detrimental to this research.

## 3.3. Validity & Reliability

### 3.3.1. Validity

Conversely, validity is just as important to qualitative research. Validity is defined as the research's accuracy and conformity to other scholarly publications (Silverman, 2011, p. 369). Yin (2018, p. 87) outlines four strategies to ensure validity in case study research. Firstly, there is construct validity, which implies using many sources as your data (Yin, 2018, p. 87). In other words, this is a triangulation of data. As this research analyzes both interviews and documents, this ensures that the issue is observed from a variety of perspectives, ensuring validity. Secondly, there is internal validity, where, in the data analysis process, the researcher takes an iterative approach to analyzing their data (Yin, 2018, p. 87). In accordance with Silverman's (2011, p. 374) guidelines, I carried out the following actions to guarantee internal validity: used theory to aid in discovering any deviant cases, analyzed data in an iterative manner, small sections at a time to ensure consistency and compared gathered data to existing research to ensure parallels with current academic discussion. Thirdly, there is external validity in which the results themselves can be analytically generalized (Yin, 2018, p. 87). As mentioned by Yin (2018, p. 92), formulating "how" and "why" research questions make them more generalizable and thus increasing external validity. As this research seeks to understand how public service media leverage digital technologies to create public value, external validity is ensured. The final strategy for ensuring quality research designs is reliability, which is described in the following section (Yin, 2018, p. 87).

### 3.3.2. Reliability

Reliability in qualitative research pertains to how easily another researcher could replicate your findings (Silverman, 2011, p. 360). The methodology portion of this paper provides a transparent description of the approach used to select and analyze the data, ensuring reliability throughout the study. To ensure reliability in this research, a case study template based on the theory outlined in the previous chapter was developed. The operationalization of diversity and social cohesion and the justification for the case study approach in the research thereby both exhibited theoretical transparency. Additionally, self-reflexivity is a crucial component of qualitative research reliability that is always necessary to discuss (Tracy, 2010, p. 842). It is essential for researchers to disclose any potential biases or advantages in this

area of their research (Tracy, 2010, p. 842). As this research is grounded in theory, potential biases were limited yet taken into consideration when collecting data and will be explained further in this chapter.

## 3.4.   Case Study Selection

The two cases that will be examined in this research are that of public service media in Canada and the Netherlands. These countries have been selected because of both their similarities and differences. Firstly, Canada and the Netherlands can be categorized in different media systems. Canada subscribes to the Liberal model (Hallin & Mancini, 2004a) while the Netherlands, follows the system of the Democratic Corporatist model (Hallin & Mancini, 2004b). Secondly, the PSM structures differ between the countries. Canada has a singular national public broadcaster while the Netherlands follows a pluriform approach with a group of thirteen public media institutions. It is interesting to investigate the different approaches to social cohesion amongst these differing structures. Finally, Canada and the Netherlands share a multicultural population with strong linguistic history amongst Canada's Francophone and Indigenous populations and the Netherlands' Friesian people as well as migrant minorities within both countries. Public service media are thereby tasked with balancing the appreciation and celebration of cultural and linguistic diversity while maintaining social cohesion (CBC, n.d.; Our Mission - Over NPO, n.d.). Thus, these two cases are most appropriate for this research.

## 3.5.   Units of Analysis

The units of analysis for this research include interview transcripts from interviews with individuals who have experience in the topic at hand as well as a variety of documents, articles, blog posts, press releases, videos, policy documents, and web pages, etc. that offer insights into innovative technologies that that the two PSM use to foster social cohesion or diversity. Each case has its own units of analysis and sources which are laid out in two tables according to the case study template which is available in Appendix A. These sources will be referenced in Chapter 4 (Results) however will not be included in the reference list given that they are presented in Appendix A.

## 3.6.   Data Collection Process

### 3.6.1.   Documents

The analysis of documents will be the first method of analysis as it holds many advantages, including the documents being constantly reviewable, particular, and extensive (Yin, 2018, p. 179). To find the documents, the CBC/Radio-Canada and NPO websites were consulted with initial searches into their documents published by their corporate team, including the most recent Annual Reports, Corporate Strategies, or any other relevant publications. Then press releases were considered, using any statements

that were relevant to the research. Since digital technologies are consistently changing, press releases published between 2020 to present were scanned for relevant information. This additionally ensures saturation. The same strategy was also applied to the CBC's blog surrounding their innovation lab (*CBC Digital Labs)* and the NPO's *NPO Innovatie.* Blog items from CBC/Radio-Canada and project descriptions from NPO were extracted. The governing bodies responsible for broadcasting in either country were also consulted, including the Canadian Radio-television and Telecommunications Commission (CRTC) for Canada and the Commissariaat voor de Media (CVDM) for the Netherlands. From there, regulating policy documents were extracted. Finally, a Google search was done, using search terms such as 'CBC and diversity,' 'NPO recommender systems,' or 'CBC and social cohesion.' This produced relevant articles from external sources or YouTube videos of notable people within the broadcasters speaking about their products in services in the context of this research. Each source was critically examined by the researcher to gauge its relevance and the validity of the source. Any external articles were extracted from government websites or reliable news sources. To get an initial understanding of which documents in the Dutch language were suitable for analysis for the Netherlands case study, the search was conducted using the automatic Google Translate plugin that immediately translates webpages into your desired language to grasp the content of the sources. From there, documents were selected and downloaded in the original Dutch language. PDFs of these sources were then uploaded into Deepl's PDF translation software and subsequently coded.

### 3.6.2.    Interviews

A secondary data source was collected in the form of interviews. interviews will aid the research in the sense that they allow for specific information and help in putting the data collected into perspective (Yin, 2018, p. 183). For the case of Canada, experts from CBC/Radio-Canada were sourced on LinkedIn and contacted to arrange interviews. Using the case study templates, interview questions were developed based on the theory presented in the previous chapter (see Appendix B for the interview guide). The interviews were conducted over Microsoft Teams, recorded, and transcribed using Microsoft's automated transcription software. Recordings were then verified using the original recording to ensure accuracy. The participants signed informed consent forms and were reminded that the data would be properly stored (see Appendix E). During the interviews, proper methods were applied, including making the interviewee feel comfortable, understanding what the interviewee is explaining and confirming with them that it was well-captured, etc. (Johnson, 2002, pp. 111-113).

What is also important to consider when conducting an interview, especially with specialists in the field, is the way that the interviewee perceives the interviewer (Bogner & Menz, 2009, p. 58). An effective way to ensure that the interviewee is comfortable sharing their expertise with the interviewer is

if the person interviewing is perceived as a colleague or as someone with equal knowledge in the subject (Bogner & Menz, 2009, p. 58). Since the interviewer in this research is a young woman, especially since individuals in the tech field were interviewed, it can be assumed that the researcher does not have the knowledge to have meaningful discussion about the subject. However, through the research conducted in Chapter 2, the interviewer was well versed in the technical and theoretical aspects of the research, thus enabling a space where the interviewee can speak freely about their expertise without fear of needing to explain small details.

To select the interviewees, purposive sampling was selected (Palinkas et al., 2013, p. 534). Interviewees were sourced through personal networks and through the network of the thesis supervisor. Any additional interviewees were found through LinkedIn. The criteria to select experts to interview are as follows: the interviewees must currently or previously be employed by CBC/Radio-Canada or NPO (or any of the thirteen public broadcasters in the Netherlands), or have worked closely with either organization, with a minimum of two years of experience. This ensures that the individual is well knowledgeable on the subject of the case. To ensure that their insights were valuable to the research, they must also work or have experience in the field of digital innovation, content strategy, diversity, or related fields. Prior to the interview, each interviewee was sent an informed consent form to inform them of their rights. For this research, three interviews were conducted for the case of the CBC/Radio-Canada and three interviews for NPO. The name, title, and description of experience for each interviewee can be seen in Appendix C.

## 3.7.  Operationalization

After developing a conceptual model, the key dimensions of this study are operationalized to ensure reliability and facilitate a robust case study analysis that aligns with existing literature. Table 1 outlines the approach for each case study in the upcoming chapter of this research. Additionally, the interview questionnaire serves as operationalization for the interviews and can be found in Appendix B.

**Table 1**

Operationalization

| Theme | Sub-Theme | Operationalization |
| --- | --- | --- |
| **Social Cohesion** | **Collaborative Filtering** | *Interview:* <br> Measured efforts to showcase diverse content in personalization systems by asking interviewees: *How does CBC/NPO currently utilize collaborative filtering techniques to promote social cohesion within communities?* |

| Theme | Sub-Theme | Operationalization |
|---|---|---|
| | | *Desk Research:*<br>This concept is measured through conference videos, internal publications, blog posts, and press releases regarding how PSM are offering more socially cohesive content through algorithmic recommendation systems. This includes recommending content outside of their regular content bubble. |
| | **Conversational Chatbots** | *Interview:*<br>Measured current chatbot capabilities by asking interviewees: *In what ways does CBC/NPO currently use conversational chatbots to incite public participation?*<br><br>*Desk Research:*<br>This concept is measured through news posts, internal publications, blog posts, and press releases regarding how PSM are utilizing conversational chatbots to incite public participation and to offer more specific personalization. |
| | **Digital Collaboration with External Platforms** | *Interview:*<br>Measured collaboration efforts with third-party platforms in terms of increasing universality and accessibility by asking interviewees: *What do you want to achieve from collaborating with external platforms?* and *How does this align with the goal of social cohesion?*<br><br>*Desk Research:*<br>This concept is measured through internal publications, press releases, and policy documents regarding how PSM use external platforms to disseminate their content allowing them to reach more audiences. |
| | **Social TV** | *Interview:*<br>Measured social TV capabilities by asking interviewees: *How does CBC/NPO create meaningful discussion on social media about their televised programming?*<br><br>*Desk Research:*<br>This concept is measured through videos, press releases, and internal publications regarding how PSM integrate their television programs with social media to incite healthy public debate surrounding culturally significant programming. |
| | **Encouraging Online Participation** | *Interview:*<br>Measured by assessing digital strategies by asking interviewees:<br>*How does CBC/NPO incite public participation through online strategies?* |

| Theme | Sub-Theme | Operationalization |
|-------|-----------|--------------------|
| | | *Desk Research*<br>This concept is measured through internal publications and press releases regarding how PSM encourage users to participate in debate amongst audiences or directly with the PSM using social media or other collaborative platforms. |
| | **Technology-Enabled Accessibility** | *Interview:*<br>Measured accessibility capabilities by asking interviews: *What specific technologies have you implemented to enhance accessibility for diverse audiences, including those with disabilities, ensuring that everyone has equitable access to your services?*<br><br>*Desk Research*<br>This concept is measured release notes, internal publications, policy documents, news articles, and blog regarding how PSM utilize technology to produce content that is accessible to individuals with disabilities as well as in multiple languages. |
| **Diversity** | **Diversified Algorithms** | *Interview:*<br>Measured efforts to avoid filter bubbles in personalization systems by asking interviewees: *How does the CBC/NPO deal with filter bubbles?* And *How can CBC/NPO guarantee exposure diversity through diversified algorithms?*<br><br>*Desk Research:*<br>This concept is measured through conference videos, internal publications, blog posts, and press releases to understand current algorithmic capabilities and how they are used to offer diverse content to users. |
| | **Online Spaces for Marginalized Communities** | *Interview:*<br>Measured how PSM create safe spaces online for marginalized groups to interact by asking interviewees: *How does CBC/NPO leverage technology to foster an online community where individuals in marginalized communities can come together?* And *How does the CBC/NPO ensure marginalized voices are heard?*<br><br>*Desk Research:*<br>This concept is measured internal publications and press releases regarding how PSM are creating online spaces for communities to interact in a safe and respectful manner. |

| Theme | Sub-Theme | Operationalization |
|---|---|---|
| | **Multi-Channel Collaborations with Local Groups** | *Interview:* Measured how PSM collaborate with local groups to increase source diversity by asking interviewees: *How does CBC/NPO collaborate with local groups to showcase more diverse voices and languages?* |
| | | *Desk Research:* This concept is measured through internal publications and press releases regarding how PSM partner with local groups to ensure marginalized voices are heard. |
| | **Ethnic Community Podcasts** | *Interview:* Measured how PSM are using online audio content to broadcast ethnically diverse content by asking interviewees: *How does CBC/NPO highlight ethnic and linguistic communities through your online audio services?* |
| | | *Desk Research:* This concept is measured internal publications, press releases, blog posts, and news articles regarding how PSM utilize digital technologies to produce ethnic and linguistic community content, especially podcasts. |

## 3.8. Data Analysis

Utilizing the developed case study template, a thematic analysis of the documents and expert interviews was conducted. Thematical analysis is a method of analysis in the field of social sciences (Terry et al., 2017, p. 17). It involves "identifying, analyzing, and reporting patterns (themes) within data" (Braun & Clarke, 2006, p. 29). In essence, textual materials are coded to find prevalent themes that help the researcher further understand the data set (Joffe, 2011, p. 209). The findings from a thematic analysis highlight the most significant interpretations of the data, providing deep understanding of the underlying themes.

On the other hand, since this research employs the use of a case study template, a deductive approach is most appropriate to analyze the data. Thematic analyses can be either inductive in nature, where the themes are not predetermined during the time of analysis, or deductive, where the patterns are outlined through theoretical frameworks prior to analysis (McKibben et al., 2020, p. 157). Using the themes determined through the conceptual framework, a deductive, thematic analysis was conducted. In deductive analysis, the research is driven by theory while allowing for additional themes to emerge (Joffe, 2012, p. 220). These emerging themes will be discussed in Chapter 4 (Results).

Following Braun & Clarke's (2006, p. 87) guidelines for a thematic analysis, it is imperative to first become familiar with the data set. This involved noting initial thoughts and ideas when sourcing the documents for analysis and when verifying the transcriptions of the interviews. Then, all units of analysis were fully read to ensure familiarization before coding. When it came to coding, a deductive approach was implemented. This involves utilizing the theoretical framework in which to base the themes (McKibben et al., 2020, p. 157). Therefore, the conceptual framework outlined in Chapter 2 provided the themes and sub-themes for this research. In other words, the texts were segmented according to the social cohesion and diversity conceptual model. Coding was then conducted using the Atlas.ti coding software. Finally, a report was produced using the themes, sub-themes, and codes.

## 3.9.    Research Ethics

When it comes to academic research, ethics are important. This thesis consisted in the analysis of two categories of data: interviews and documents. In preparing for this research, each participant were informed of their rights and provided with an informed consent form, ensuring they understood the purpose of the research and their right to withdraw at any time without repercussions. Confidentiality of the participants and their data was ensured by conducting the research under the guidelines of the Erasmus University Rotterdam Ethics Committee. All documents that were analyzed are publicly available online and translated (if necessary) using accredited software. Moreover, methods were employed to mitigate researcher bias, ensuring an objective and fair interpretation of the content.

# 4. Results

This chapter will outline the results gathered from the data collected for this research. This section will be divided into the two case studies: Canada and the Netherlands. For each case study, the results will be divided into the sections defined through the conceptual model. This chapter will conclude by comparing how the two PSM systems leverage digital technologies to create social cohesion and diversity. All quotations in Case Study 2: The Netherlands that were originally in Dutch have been translated using Deepl's translation software.

## 4.1. Case Study 1: Canada

In Canada, public service media plays a foundational role. Established in 1932, the Canadian Broadcasting Corporation (CBC)/Radio-Canada (hereby CBC/Radio-Canada) had the fundamental obligation to provide Canadians with Canadian content, without the fear of intervention from foreign entities (Boardman & Vining, 1996, p. 48). CBC/Radio-Canada is Canada's national public broadcaster that provides their services in English, French, and eight Indigenous languages (CBC/Radio-Canada, 2024b, p. 2). The CBC is responsible for their English services, while Radio-Canada is responsible for the French services but operate under the same responsibilities to inform, enlighten, and entertain (CBC/Radio-Canada, 2024b, pp. 2-3). They are mandated by the Broadcasting Act that requires them to provide Canadian content that is available to and represents all Canadians in both of the country's national languages, English and French (CBC/Radio-Canada, n.d., para. 1).

In terms of social cohesion and diversity, CBC/Radio-Canada is mandated to "reflect Canada… to national and regional audiences, while serving the specific needs of those regions" (CBC/Radio-Canada, n.d., para. 1). This is reflected in their digital strategy where they seek to personalize their digital services while reflecting Canada as a whole and build regional connections (CBC/Radio-Canada, 2019, p. 2)

### 4.1.1. Social Cohesion

*Collaborative Filtering*

When it comes to social cohesion, "public media is really about building bridges… and we believe that investments into public media and [recommendation systems (recsys)] technology and into machine learning technology can hold us together within Canada," as explained by Berry (2018, 38:11), who worked for CBC/Radio-Canada, at a conference on recommendation systems. Interviewees further this notion and mention the importance of developing the algorithms in-house as it gives them better

control over content (Interviewee 1; Interviewee 2). This also enables CBC/Radio-Canada to recommend content to audiences that offer a bigger picture, as mentioned in Interviewee 1:

> Instead of focusing on you as the individual and personalizing the content to you, is there a way to focus on the context that [you're] in, right? Whether it's a location or a community of interest or whatever, we focus on that so it's less individualized, and it's about the context that they're searching for.

This is echoed in their strategic plan where CBC/Radio-Canada's objective is to "make sure all Canadians see themselves reflected in [their] digital services while connecting them to the many communities and voices that make our country great" (CBC/Radio-Canada, 2019, p. 2; CBC/Radio-Canada, 2023b, p. 10). CBC/Radio-Canada achieves this through custom-built algorithms that utilize machine learning technology where relevant content items are balanced with unanticipated content to improve their recommendations (Fujimura, 2023, p. 3). Beyond collaborative filtering, CBC/Radio-Canada is also innovating with session-based filtering, where algorithms predict the next steps taken by a user while presenting many different perspectives that are representative of all Canadians (Cornell, 2018, p. 2). These approaches are described to be some of the "tools in the arsenal to try and bring people together and have more empathy with each other overall" (Berry, 2018, 36:47).

Users are thus met with either a blended recommended feed that offers a wide range of content in addition to personalization, or a section dedicated to specific recommendations, surrounded by fixed content for outside perspectives (Interviewee 2; Interviewee 3). Interviewee 3 states that this approach can "help Canadians see each other," further elaborating that a community involves having the same basis of information and by offering citizens the same foundation of knowledge, communities of interest can form (Interviewee 3). CBC/Radio-Canada's approach to collaborative filtering supports academic discussions on the usage of collaborative filtering to advance their public remit in promoting mutual knowledge and understanding to strengthen social relationships (Matema & Kariuki, 2022, p. 7; Sørensen & Hutchinson, 2018, pp. 93-101; Hildén, 2021 pp. 777-787; Karimi et al., 2018, p. 1206).

### Conversational Chatbots

Generative conversational chatbots are not actively being used on CBC/Radio-Canada platforms to foster social cohesion and incite public participation. Rather, non-generative chatbots are being used as "a content discovery vehicle," (Interviewee 2) namely the incorporation of CBC News into smart devices, such as Amazon Alexa and Google Home (Zvobgo, 2023, pp. 1-2). One respondent mentions how Ask CBC – a manually maintained page where citizens can submit their questions or queries – has the potential to one day be transformed into a conversational chatbot, although there are no concrete plans to

do so thus far (Interviewee 1). On the other hand, in previous years, chatbots have been used to educate Canadian citizens to identify fake news during the 2019 general elections (CBC News, 2019, p. 2; Morgan, 2019, para. 1). CBC/Radio-Canada launched a chatbot through Facebook Messenger to "help audience members recognize fake news stories for what they are" (CBC/Radio-Canada, 2021, p. 18).

CBC/Radio-Canada's use of Facebook Messenger as a platform to discuss important topics with their audience and create trust between the citizens and the public broadcaster parallels Sørensen & Hutchinson's (2018, p. 94) discussion of utilizing chatbots to discuss topics that strengthen certain dimensions of social cohesion. However, they are more in line with big players in PSM such as the BBC, utilizing chatbots primarily as a distribution tactic and leaving generative conversational chatbots to be developed in future innovations (Jones & Jones, 2019, p. 1049).

### *Digital Collaboration with External Platforms*

All interview respondents mention that the primary reason for collaborating with external platforms is to increase reach and heighten recognition and relevance with Interviewee 2 stating that "the principle is that we really have to be where our audience is… and we have to be there as a trusted voice and as a balanced voice" (Interviewee 1; Interviewee 2; Interviewee 3). Of third-party platforms, CBC/Radio-Canada is most invested in YouTube and Tik Tok but have their content on a multitude of different platforms, such as Amazon Prime, Helix TV, Netflix, iTunes and Roku (Interviewee 2; CBC/Radio-Canada, 2023a, p. 5; CBC/Radio-Canada, 2023b, p. 10; CBC/Radio-Canada, 2019, p. 2; CBC/Radio-Canada, 2023f, para. 5; CBC/Radio-Canada, 2023g, para. 1). This is justified by the broadcaster in saying that "if Canadian culture is going to be strong, it needs to be part of the global market from which Canadians now consume more content" (CBC/Radio-Canada, 2019, p. 2).

While third-party platforms are an important aspect of CBC/Radio-Canada's content and distribution strategies, digital collaborations go beyond media conglomerates. An important digital collaboration of CBC/Radio-Canada is with other public broadcasters. CBC/Radio-Canada is currently partnered with public broadcasters, such as Australia's ABC, Germany's ZDF, Belgium's RTDF, and Switzerland's SRG SSR (CBC/Radio-Canada, 2022a, para. 1; CBC/Radio-Canada, 2023d, para. 1; CBC/Radio-Canada, 2023h, para. 1). This allows them to share knowledge and co-produce content to achieve their public service remits, as Interviewee 1 explains:

> We're all, to varying degrees, sort of worried about the same things. Things like polarization, and the things that have enabled the big tech social platforms that have created sort of echo chambers of content for their users, which has, you know, fed that polarization, which has fed to sort of alienating groups of people from each other, citizens from each other… We all worry about that.

Parallelling academic research, CBC/Radio-Canada's collaboration with third-party media corporations is an effective way to cast a wider net when distributing Canadian content and reaching a more diverse audiences, furthering their social cohesion and universality remit (Burkart & Leijonhufvud, 2019, p. 173; Lindeberg & Ala-Fossi, 2023, pp. 162-163; Kyianytsia, 2022, p. 65). On the other hand, digital collaborations with other public broadcasters presented itself as an emerging theme in the researching process. Sørensen & Hutchinson's (2018) speak of such partnerships amongst European broadcasters in the context of innovation and universality across Europe, but this can also be applied to CBC/Radio-Canada collaborating with international broadcasters in an effort to share knowledge to further their social cohesion and diversity remits.

*Social TV*

When it comes to harmonizing televisions and social media, there isn't a unified strategy, and it is greatly dependent on executive producers (Interviewee 2). As previously mentioned, CBC/Radio-Canada is expanding their reach to include content on YouTube, with Interviewee 3 explaining that "YouTube is becoming a TV broadcast platform and long form content plays there." This is especially prominent during large sporting events, such as professional women's hockey, or cultural events like Canada Day, where CBC/Radio-Canada will stream to the platform with a moderated chat (Interviewee 1; CBC/Radio-Canada, 2023i, para. 1). The closest example of Social TV that CBC/Radio-Canada partakes in is through the previously mentioned program, Ask CBC, where audience will email in and content will be created around that information (Interviewee 2). While CBC/Radio-Canada follows Ramón & Rojas-Torrijos (2021, p. 920) lead in posting online during large events, strategically, it is from the point of view of reach rather than inciting meaningful discussion online. Therefore, social TV is not part of CBC/Radio-Canada's strategy to increase social cohesion as it is for other public service media as was presented through theory (Hutchinson, 2015, pp. 89-90; Van Dijck & Poell, 2014, p. 155).

*Encouraging Online Participation*

To encourage online participation, CBC/Radio-Canada's approach is three-fold. Firstly, when selecting content to upload in short-form videos on platforms such as Tik Tok, Reels, or YouTube Shorts, it's important to select meaningful content that represents and discusses real issues that Canadians face (Interviewee 2). Through CBC's arsenal of diverse content, clips that are posted to social media are methodically selected, which is a "great example of how we can think about our content for different contexts and platforms and how we leverage that to [build] empathy and awareness and create those connections" (Interviewee 2). Secondly, there are moderated comment sections on certain CBC/Radio-Canada services to ensure that online spaces are free from harassment (Interviewee 1; Interviewee 2; Interviewee 3). "Moderation is a product," explains Interviewee 3, and many investments have been made

to ensure toxic environments are mitigated online, opening the door for healthy discussion and to protect media professionals (Interviewee 1; Interviewee 2; Interviewee 3). CBC/Radio-Canada describes online toxicity as a "[threat] to drive out the very voices and perspectives indispensable to a well-informed, democratic society" (CBC/Radio-Canada. 2021, p. 17). Lastly, in-person townhall-style events are organized and live streamed on YouTube to discuss important issues to incite discussion (Interviewee 1). CBC/Radio-Canada's strategy to encourage online participation is in line with academic discussion (Stieglitz & Roß, 2022, pp. 105-106; Ammari et al., 2022, p. 22).

### *Technology-Enabled Accessibility*

Accessibility is not an afterthought at CBC/Radio-Canada. In fact, all three respondents mentioned that the broadcaster holds itself to high accessibility standards and that it is integrated at the developer phase, thereby ensuring that all services are developed with accessibility in mind (Interviewee 1; Interviewee 2; Interviewee 3). This includes organizing empathy workshops for developers and creators to "understand how users with disabilities feel when they encounter elements that are not very accessible" (Wang, 2022, para. 10). While they are mandated by the CRTC, CBC/Radio-Canada is committed to ensure that their content is accessible by all Canadians and strive to be "the barrier-free public media organization that Canadians deserve" (CBC/Radio-Canada, 2023e, p. 2; CRTC, 2022, p. 10). Accessibility is a priority across the organization, but when it comes to content, their attention is in their digital services in increasing the accessibility of their audio-, visual-, and text-based content (CBC/Radio-Canada, 2023e, p. 30). A primary focus currently at Canada's broadcaster is "natural language processing speech recognition technology" (Interviewee 1).

In addition to guaranteeing accessibility for citizens with disabilities, with a country as large and as geographically dispersed as Canada, CBC/Radio-Canada also has to ensure that all Canadians have access to important information distributed by the broadcaster, especially in the event of a crisis (CRTC, 2022, p. 9). In response to this, CBC Lite was created, as explained by Interviewee 2:

> [CBC Lite is a] low bandwidth website that has all the same content and all of our radio streams, but it's designed to work when there's a forest fire raging and, you know, their cell access is light or whatever have you. Especially for remote communities, which tend to be racialized communities or Indigenous communities, rural communities where broadband access isn't great.

With technological advances comes charged sites that can be difficult to load in certain situations and "these kinds of advances tend to leave others behind. CBC Lite hopes to begin bridging that gap between accessibility and functionality" (Boudreau, 2021, para. 4). CBC/Radio-Canada's accessibility strategy is

in line with theoretical discussions on the importance of access in public services (Hutchinson, 2015; Kablan et al., 2015, p. 396; Csontos & Heckl, 2020, p. 139; Soetemans & Jackson, 2021, p. 198).

### 4.1.2.    Diversity

*Diversified Algorithms*

CBC/Radio-Canada strives to be a "beacon of truth and trust against 'fake news' and algorithms that put democracy and the respect for different perspectives at risk" (CBC/Radio-Canada, 2019, p. 1). This is achieved through curated algorithms that are a blend of "technology and human-edited curation" (Interviewee 3). The same algorithms that are created to ensure that Canadians see each other through personalization are also used "to guard against… that siloing of views" (Interviewee 1; Cornell, 2018, p. 2; Fujimura, 2023, p. 3). Since their algorithms are custom-built to their services, CBC/Radio-Canada are able to promote content and exposure diversity and help audiences avoid filter bubbles (Interviewee 2). Interviewee 3 goes on to mention that "the primary recsys algorithm outright balances diversity and relevance." However, Interviewee 1 mentions that this can only be achieved if the broadcaster is understanding the contexts in which their audience is using their platforms and being available to their audience when they need it. The respondent emphasized the importance of not making assumptions surrounding consumer interests and needs, but using concrete data to be able to deliver diverse content (Interviewee 1):

> Our DNA is, or at least our history is, linear programming. It's very geared towards the six o'clock news… And so, we've realized that the very rapidly increasing digital-only audience [is looking for content] whenever it's convenient for them, when they have five minutes at the bus stop or whatever… They're looking for the information that's important to them. So, we've had to rejig the newsroom to not be driving towards six o'clock but driving throughout the day (Interviewee 1).

CBC/Radio-Canada recognizes the importance of bursting filter bubbles and doing so using diversified algorithms, sharing the opinions of academic scholars (Hildén, 2021 p. 787; Helberger, 2019, p. 1004; Donders, 2019, p. 3).

*Online Spaces for Marginalized Communities*

CBC/Radio-Canada has many efforts to create in-person community-building events in person, but when it comes to digital, there is less interest (Interviewee 2). Thus, the broadcaster is finding ways to harmonize these in-person and virtual opportunities. One example of this is a partnership program with public libraries across Canada where CBC/Radio-Canada can "engage more deeply with Canadians in under-represented and under-served communities" (CBC/Radio-Canada, 2023b, p. 12). This collaboration

was also brought into the digital space with CBC corner, an online space where public libraries can leverage the public broadcaster's content and offerings (CBC/Radio-Canada, 2023a, p. 6; Interviewee 1).

While there are no deliberate efforts delivered solely by CBC/Radio-Canada to create online spaces, through international partnerships, this can be achieved. As previously mentioned, CBC/Radio-Canada has collaborated with public broadcasters in Belgium, Germany, and Switzerland and through this, the *Public Service Incubator* was created (Interviewee 1; CBC/Radio-Canada, 2023d, para. 1). Through this partnership, a digital space is developed where "accessible and meaningful online conversations on issues of public interest, free from harassment or bullying… that will reflect diverse viewpoints and promote greater empathy and understanding, without suppressing perspectives or ideas." (CBC/Radio-Canada, 2023d, para. 2). While these spaces aren't created specifically for marginalized communities, in making a safer online environment, individuals from underrepresented groups are able to engage in democratic debate and express their particular concerns and needs more freely and without fear of online harassment, with the CEO of CBC/Radio-Canada explaining:

> This partnership of four of the world's leading public broadcasters underlines our collective and common purpose to address one of the most threatening phenomena of our time — unfettered online abuse... The social media environment has splintered into so many echo chambers that exclude diversity of opinion, discourage debate and silence dissent. Now is the time for public service media like CBC/Radio-Canada to play a role in reversing this trend (CBC/Radio-Canada, 2023d, para. 3).

While Canada's social media strategy isn't focused on creating online spaces for marginalized groups, in posting diverse content, moderating comments, and collaborating with international broadcasters, a safe space for underrepresented groups to connect is facilitated (Kavoura, 2014, pp. 98-99; Burton, 2020, p. 911; Rojas-Torrijos & Ramón, 2021, p. 229; Fuchs, 2014, p. 73).

### *Partnerships with Local Groups*

When asked on how CBC/Radio-Canada partners with local communities to increase diversity, Interviewee respondents recognized that these initiatives are primarily taking place in-person and is delegated to the different branches and newsrooms across the country (Interviewee 1; Interviewee 2; Interviewee 3). In doing so, they "will strengthen this connection with significant local and regional content that is relevant to the people in their communities, and bring those communities to the rest of the country" (CBC/Radio-Canada, 2019, p. 2). There are, however, some centralized strategies when it comes to partnerships. In addition to the aforementioned library partnership to deliver services to underrepresented groups, CBC/Radio-Canada's National Indigenous Strategy outlines several ways that

the broadcaster partners with Indigenous groups and individuals to further their truth and reconciliation remit (CBC/Radio-Canada, 2024a, p. 22).

In general, CBC/Radio-Canada uses its platforms in conjunction with minority groups to give them a voice that would otherwise not be heard, with Interviewee 2 indicating that "the more local a story is, the more global it is" (Interviewee 1; Interviewee 2; CBC/Radio-Canada, 2024d, para. 7). In diversifying the sources of information and collaborating directly with underrepresented communities, ultimately, there are digital impacts on the content that is produced and then distributed online. Nevertheless, these partnerships are mutually beneficial as it delivers more diversified content, but also partnering with broadcasters in rural communities, such as Inuit TV, can offer broadcasting in a minority language in the rare instances where CBC's signals don't reach (CBC/Radio-Canada, 2024e, para. 4). Through collaborations with local groups, CBC/Radio-Canada is in line with academic discussion of fostering participation and representation in collaborating with local groups (Wenzel, 2023, p. 2640).

### Ethnic Community Podcasting

In CBC/Radio-Canada's Environmental scan of current media consumption trends, they mention that "the advantage of the podcasting format is that…any topic a person may be interested in can usually be found online in podcast format" (CBC/Radio-Canada, 2023c, p. 12). On-demand audio services are recognized to be encroaching on the "traditional radio's monopoly" and thus are used to engage with a wider and younger audience (CBC/Radio-Canada, 2023c, p. 10). Through podcasting, CBC/Radio-Canada delivers online audio services in both national languages, English and French, as well as in eight indigenous languages (Interviewee 1; Interviewee 2; CBC/Radio-Canada, 2023a, p. 7; Tait, 2024, p. 4). Beyond the linguistic variety amongst CBC/Radio-Canda podcasts, there is an effort to tell stories from local communities and marginalized voices. Initiatives like *Being Black in Canada*, showcases "stories and experiences of Black Canadians," offering programming both in video and in podcasting formats (CBC/Radio-Canada, 2024b, pp. 1-2). To also bring light to local communities across Canada, seven podcasts were developed to answer questions from the audience and to offer "in-depth storytelling opportunities" (Hernandez, 2024, p. 2) to highlight stories from Prince Edward Island in Canada's East to Vancouver Island, in the West (Tait, 2024, p. 4). CBC/Radio-Canada's podcast strategy is in line with academic discussion surrounding online ethnic community broadcasting (Aufderheide et al., 2020, p. 1684; Harris, 2019, p. 16).

## 4.2.    Case Study 2: The Netherlands

The Dutch system for public broadcasting follows a pluriform approach based on memberships of associations (Veerbeek et al., 2022, p. 422). In other words, the population of the Netherlands is represented across a plethora of broadcasting institutions as opposed to a singular PSM to represent everyone (Veerbeek et al., 2022, p. 422). These independent broadcasters are AVOTROS, BNNVARA, EO, HUMAN, KRO-NCRV, MAX, NOS, NTR, ON, PowNed. VPRO, WNL, ZWART (NPO, n.d., para. 4). The Nederlandse Publieke Omroep (NPO) acts as the overarching administrative body that oversees the group of thirteen independent broadcasters (NPO, n.d., para. 1).  In their mission to inform, inspire, and entertain, NPO seeks to connect the entire Dutch population through their services and programs (NPO, n.d., para. 2).

Dutch public broadcasters are mandated to offer a "balanced picture of society and [reflect] the multiformity of beliefs, opinions, and interests in the social, cultural, and philosophical fields among the population" (Commissariaat voor de Media, 2008, art. 2.1, para. 2, point b), reflecting their need for both social cohesion and diversity. NPO describes the value that they bring to the Netherlands as instigating public discussion, producing cultural content, creating innovation, and uniting the country (*Wat We Betekenen*, n.d., paras. 3-7). This is part of their digital strategy as they seek to propagate these values through linear and modern media.

### 4.2.1.    Social Cohesion

*Collaborative Filtering*

Personalization is still at a "rudimentary" stage within the Netherlands and thus algorithmic collaborative filtering is not being employed (Interviewee 4). The NPO recognizes the need for personalized recommendations and a basic version is being implemented through metadata, recommending adjacent genres to the content originally consumed, as well as promoting programs that are popular amongst other viewers, however a sophisticated recommendation system is not currently in use (NPO, 2022b, p. 24; Interviewee 4, Interviewee 7). This is due to platforms, such as NPO Start, NPO's video-on-demand platform that houses content from the thirteen independent broadcasters, still being in its infancy in addition to strict data privacy laws enforced by the government and European Union (Interviewee 4; Interviewee 5; Interviewee 6; Interviewee 7). However, the NPO are researching "pluralistic recommendations (pluriforme aanbevelingen)" using artificial intelligence (NPO, 2022d, para. 5).

Instead, public broadcasters within the Netherlands are utilizing editorial and casting choices to represent the multicultural population present within the countries (Interviewee 4; Interviewee 5;

Interviewee 6; Interviewee 7). This is also achieved through balancing the content of the individual broadcasters (Interviewee 7) who are encouraged to "focus on specific themes (op specifieke thema's richten)" amongst NPOs platforms (NPO, 2022b, p. 10). Programs where they "try to connect everybody, and when there are big events of big football games or breaking news," will most likely be aired on NPO1, a linear TV channel, whereas more "niche" content is broadcasted on the NPO2 TV channel (Interviewee 5; NPO, 2022b, pp. 21-22). NPO Start, NPO3, a linear channel with an online platform, and their social media host the content aimed at the most specific and targeted audiences (Interviewee 5; Interviewee 6). Thus, any collaborative filtering techniques are "not through technology at the moment" (Interviewee 4). As the Netherlands is not yet using technology to facilitate collaborative filtering techniques, they are not in line with current academic discussion (Matema & Kariuki, 2022, p. 7; Sørensen & Hutchinson, 2018, pp. 93-101; Hildén, 2021 p. 777-787; Karimi et al., 2018, p. 1206).

### *Conversational Chatbots*

All four interviewees from Dutch public broadcasters agree that there are no efforts currently being made to engage audiences using generative conversational chatbots (Interviewee 4; Interviewee 5; Interviewee 6; Interviewee 7). However, in researching innovations in NPO publications, conversational chatbots appear to be in early stages of development and implemented in a few instances. NOS are researching the impact of conversational interfaces on public participation when interacting with their online news platforms (NPO, n.d.-j para. 1). Additionally, KRNO-NCRV are creating a prototype to utilize AI chatbots to access and deliver archival content (NPO, n.d.-g, para. 1). The closest that any Dutch public broadcaster has come to implementing conversational chatbots is AVOTROS that developed voice interaction using smart devices to have conversations with users surrounding the 2021 Eurovision Song Contest to give information about the participants and event (NPO, 2022e, para. 5). Chatbots are not yet a technology consistently being used to foster important democratic participation amongst the Netherlands public broadcasts, and thus does not support academic debate (Sørensen & Hutchinson, 2018, p. 94). However, they are being implemented as accessibility tools and with future innovations, can be utilized as a distribution vessel, supporting Jones & Jones (2019, P. 1049).

### *Digital Collaboration with External Platforms*

The third-party platforms that Dutch public broadcasters are specifically focused on are social media. These platforms are being used to not only increase the reach of their content, but also drive viewers to their own platforms (Interviewee 4; Interviewee 5; Interviewee 6; Interviewee 7; NPO, 2022e, p. 29). Social media allows Dutch broadcasters to cater content to the "small target groups" they are mandated to serve (Commissariaat voor de Media, 2008, art. 2.11, para. 2, point c). Previously, there has been less of a desire on the side of Dutch public broadcasters to engage on social media, but in the last

few years, it has been made clear that to reach a younger audience, it is imperative that they create content and programs for social media (Interviewee 4; Interviewee 5; Interviewee 7). This notion is furthered by Interviewee 7:

> We have these big YouTube channels because… young people will not use NPO Start as long as there's no personalization because they are spoiled with all those good interfaces like Netflix, like the algorithms who tell you exactly what you are interested in or not.

Another reason for public broadcaster presence on social media platforms is to act as a trusted voice amongst in an age of hyperinformation (Interviewee 7) in an effort to "add public value to these commercial platforms… and correct market failure" (Interviewee 4).  Outside of social media, NPO podcasts are available on the common international platforms, such as Spotify (NPO, 2020, para. 4). Broadcasters in the Netherlands recognize the importance of collaborating with third-party platforms, such as social media, supporting academic discussions (Burkart & Leijonhufvud, 2019, p. 173; Lindeberg & Ala-Fossi, 2023, ppp. 162-163; Kyianytsia, 2022, p. 65).

### *Social TV*

Regarding Social TV, Dutch public broadcasters don't have a unified strategy, but still implement engaging content surrounding their televised programming. When it comes to content decisions and creation, it is mainly the responsibility of the individual broadcasters and NPO provides them with a platform (Interviewee 5). One way that Dutch broadcasters create engaging content surrounding their video programming is by creating content directly from the ideas or questions submitted through comment sections online or submitted through applications like the NPO Radio 1 app (Interviewee 4; Interviewee 6; NPO, n.d.-c, para. 1). This is also done live with quiz shows where people can submit their answers through an app (NPO, 2022b, p. 31). Another way is through live streaming linear content on YouTube or Twitch (Interviewee 4; Interviewee 7). For example, First Dates, a linear TV program, was live streamed with commentary from popular influencers on Twitch which was successful in engaging a younger audience (Interviewee 4; NPO, n.d.-e, para. 1). There have also been interactive web series published on YouTube (NPO, n.d.-l, para. 1). However, when it comes to interactions through apps or social media in conjunction with live TV, "those worlds are too far away from each other… the audience watching TV is not used to having to ask a question on their second screen" (Interviewee 7). Overall, live streaming seems to be most successful to have live interactions with a chat, but this applies mainly to a younger audience (Interviewee 4; Interviewee 7). The Netherlands does not have a centralized strategy to create meaningful discussion online about their linear TV programs and thus does not support academic discussion (Hutchinson, 2015, pp. 89-90; Van Dijck & Poell, 2014, p. 155).

*Encouraging Online Participation*

As previously mentioned, to reach a wider audience, it's imperative to post to social channels (Interviewee 4; Interviewee 5; Interviewee 6; Interviewee 7). Broadcasters in the Netherlands engage their audiences either through specially curated online content, or through clipping small segments of linear or online programming (Interviewee 4; Interviewee 7). Through social media, Dutch broadcasters are able to post more specific content that is relevant to smaller audiences, as Interviewee 6 explains:

> We use our TV channels and the programs we make for a TV audience for the bigger group of people… we try to bridge the gap between the community from within… but in our social content, we focus on our peer groups… so we are making special content for our groups.

Since these are posted to social platforms, commenting and interaction is available (Interviewee 6; Interviewee 7). These commenting sections are moderated to ensure safety and mitigate online harassment (Interviewee 4; Interviewee 6).  In an effort to engage with their audience through social media Dutch public service media can be found on common social platforms such as X, Facebook, Instagram, Tik Tok, and YouTube (Interviewee 4; Interviewee 5; Interviewee 6; Interviewee 7; NPO, n.d.-f, para. 1), but they are also experimenting with newer emerging platforms such as Discord, Twitch, Reddit, and Threads (Interviewee 4; NPO, n.d.-d, para. 1; NPO, n.d.-I, para. 1; NPO, n.d.-k, para. 1; NPO, 2023a, para. 1). They are even going as far as to break into the gaming market, with KRO-NCRV and NOS creating virtual spaces on Roblox and EO creating a virtual church in the Metaverse (NPO, n.d.-m, para. 1; NPO, n.d.-n, para. 1; NPO, n.d.-h, para. 1). Broadcasters in the Netherlands seek to find larger audiences and provide them with relevant content by finding themselves and facilitating discussion on social media platforms, as is supported through research (Stieglitz & Roß, 2022, pp. 105-106; Ammari et al., 2022, p. 22).

*Technology-Enabled Accessibility*

Dutch public broadcasters are required to create programs and services that are "accessible to everyone" (Commissariaat voor de Media, 2008, art. 2.11, para. 2, point f). This is echoed by the Head of Digital at the NOS:

> As a public broadcaster we feel that we have the obligation… to reach everybody. If that means tailoring the product to cater to specific demands, then we have to put in the effort to make that a reality… If we adapt our products to make them more accessible, we are better able to fulfil our mission (Public Media Alliance, 2022b, para 9).

Accessibility when it comes to online services within the public broadcasters in the Netherlands is held to a high standard and is implemented at the developer stage, being part of their "definition of done"

(Interviewee 4). Larger programs also have described audio, closed captioning, and sign-language interpretation, but it is not available across all programs (Interviewee 5; Interviewee 6; Interviewee 7; NPO, 2022b, p. 16; NPO, 2022a, p. 11).

Beyond regular accessibility techniques, broadcasters in the Netherlands also innovate with new ways to ensure their content is accessible. There is also integration of Google Translate and Deepl services into certain areas on NOS platforms, legible font to cater to those with dyslexia, as well as AI generated summaries of news stories to aid those with ADHD (Public Media Alliance, 2023, para. 1-2; Public Media Alliance, 2022b, para. 5; NPO, n.d.-b, para. 2). In addition, there are services that are catered towards newcomers or those who have a lower understanding of the Dutch language that use simpler Dutch to ensure understanding (Interviewee 6; Interviewee 7; NPO, 2022c, p. 29). KRO-NCRV also innovate with smart speakers to ensure that those with visual disabilities are able to participate in the TV quiz show De Slimste Mens (NPO, 2023b, para. 2). The Netherlands' public service media want to ensure that everyone has equitable access to their content, as was indicated through research (Hutchinson, 2015; Kablan et al., 2015, p. 396; Csontos & Heckl, 2020, p. 139; Soetemans & Jackson, 2021, p. 198).

### 4.2.2.     Diversity

***Diversified Algorithms***

As was previously explained, rigorous personalization algorithms are a solution that Dutch public broadcasters aim to implement in the future, indicating that they "want to… match individual needs but also try to interest people in programs outside their primary interests, with a different angle or with more social impact (willen... sluiten aan bij de individuele behoefte maar proberen mensen ook te interesseren voor programma's buiten hun primaire interesses, met een andere invalshoek of met meer maatschappelijke impact)" (NPO, 2022b, p 24). In the meantime, public broadcasters in the Netherlands are utilizing editorial and casting choices as a way to provide diversified content, however it is dependent on the end user to be able to find and consume the content (Interviewee 4; Interviewee 5; Interviewee 6; Interviewee 7). Therefore, there is no centralized strategy to use technology to mitigate filter bubbles, which is not in line with academic discussion (Hildén, 2021 p. 787; Helberger, 2019, p. 1004; Donders, 2019, p. 3).

***Online Spaces for Marginalized Communities***

For NPO, social media platforms facilitate "interaction… in a low-threshold manner about programs and broadcasters can express their identity there and build communities (interactie… op een laagdrempelige manier het gsprek aan kunnen gaan over programma's en omroepen er hun identiteit kunnen uitdragen en communities kunnen opbouwen)" (NPO, 2022b, p. 29). When it comes to the Dutch

public broadcasters and the creation of online communities, "they do not necessarily have to take specific course with regard to online communities (deze niet per se een specifieke koers hoeven te varen met betrekking tot online communities)" (NPO 2023c, para. 6). However, the broadcasters continue to offer safe spaces for niche groups online through departments that specialize in content moderation (Interviewee 7). By leveraging third-party chat platforms, broadcasters in the Netherlands have experimented with WhatsApp, Telegram, and Discord (Interviewee 5; Interviewee 6; Interviewee 6; NPO, n.d.-d, para. 1). These platforms are primarily used as a distribution tactic for certain content but with Discord, online communities for marginalized groups were also developed. One example of this is 101Barz, a space for girls and young women to get together online and discuss their shared interest for hip hop (NPO, n.d.-a; para 1-4; Interviewee 4). In their 2024-2025 Agenda for Innovation, NPO expresses the importance for isolated communities to become connected and seeks to do so in the physical and digital space in the future (NPO, 2024, para. 5). Public service media in the Netherlands supports the academic discussion surrounding the importance of creating online groups for marginalized communities and does so in their digital strategy (Kavoura, 2014, pp. 98-99; Burton, 2020, p. 911; Rojas-Torrijos & Ramón, 2021, p. 229; Fuchs, 2014).

### *Partnerships with Local Groups*

One important aspect for public broadcasters across the Netherlands is to "make… journalism together with the audience so you really get in touch with the people themselves," ensuring that local stories are told along with the people in that community" (Interviewee 5). The NPO states that it is the responsibility of the broadcasters to create content "based on Dutch ideas, with Dutch creators and producers (op basis van Nederlandse ideeën, met Nederlandse makers en producenten)" (NPO, 2022b, p. 31). Dutch public broadcasters "[anchor] public broadcasting in society (de verankering van de publieke omroep in de sameleving)" by uplifting members of marginalized groups to tell their own stories and giving them the platform and visibility that they normally would not have (NPO, 2022b, p. 34). Interviewee 5 provides the example of Paramaribo Pepers, a program that follows a Surinamese chef from the Netherlands as she explores local cuisine and stories in Suriname, where the viewership on linear TV is lower, but is quite popular online through Instagram Reels where cultural recipes and indigenous stories are told. Interviewee 6 concurs and adds their own experience in which they collaborate with a local producer to tell important stories that "reflect society as it looks like" (Interviewee 6). In addition to this, NPO's collaborations with regional public broadcasters has "further intensified (verder geïntensiveerd)" (NPO, 2022a, p. 10) to deliver content that specific provinces are looking for (Interviewee 7). In collaborating directly with local groups and unrepresented communities, public broadcasters in the

Netherlands ensure that diverse stories are told and offer their platform to uplift the voices of marginalized communities (Wenzel, 2023, p. 2640).

***Ethnic Community Podcasting***

The NPO recognizes that linear radio engagement is declining while online audio options are increasing, especially among their younger audience (NPO listen, para. 1). While podcasts are a newer way to create content for Dutch public broadcasters, there are efforts to create meaningful and diverse content in this medium (NPO, 2020, p. 1). In previous years, broadcasters created ethnic and linguistic community content through radio, but Interviewee 6 identified that it is no longer the case but believes podcasts are a good alternative. Certain live radio shows are currently being made into podcasts to expand their reach, for example a morning show about Ramadan that was broadcast early in the morning and was also put into podcast-form (Interviewee 6). Some radio stations have also transitioned to on-demand apps, where cultural music and engaging conversations are thereby available anywhere, at any time, such as the youth radio station, FunX (NPO, n.d.-f, para. 1). However, NPO finds new ways to innovate with the classic podcats medium. One example of this is with The Story of the Netherlands, a TV program that outlines the country's history as both a documentary and a drama series (Public Media Alliance, 2022a, para 26). This series is complimented by both a podcast and guided audio tours to "pick up where the series leaves off" (Public Media Alliance, 2022a, para. 28). While there is not much podcasting in minority languages, through podcasts and innovative multimedia series, the Netherlands is able to showcase important culture, groups, and history and is in line with theory (Aufderheide et al., 2020, p. 1684; Harris, 2019, p. 16).

## 4.3.  Comparing Case Studies

Both Canada and the Netherlands have interesting contributions to both diversity and social cohesion through technology. Table 2 outlines a comparison of how the case studies are creating public value through digital technologies.

**Table 2**

Comparing Case Studies

| Theme | Subtheme | Canada | The Netherlands |
|-------|----------|--------|-----------------|
| **Social Cohesion** | **Collaborative Filtering** | Has a sophisticated algorithm that utilizes collaborative filtering and session-based personalization systems to ensure that Canadians are able to have an understanding of all citizens of the country. | Does not have a sophisticated algorithmic system for personalization due to strict privacy policies. Delivers diverse content and relies on users and basic recommendation systems to find the content. |
| | **Conversational Chatbots** | Does not currently use conversational chatbots to incite public participation. | Does not currently use conversational chatbots to incite public participation but is utilizing similar technology in to deliver archival content in a unique way and are using smart devices to act as accessibility aids. |
| | **Digital Collaborations with External Platforms** | Collaborates not only with external on-demand video and audio platforms, but also relies heavily on social platforms such as Tik Tok and YouTube. | Does not collaborate with on-demand video platform but publishes audio content to Spotify. Heavily utilizes various social media platforms and innovates with newer sites, such as Threads, Meta, and Mastodon. |
| | **Social TV** | Does not have a unified strategy but posts short form content of value surrounding their television programming on social media to create discussion. | Does not have a unified strategy but takes audience suggestions from social media and has interactive programming, such as quiz shows. |
| | **Encouraging Online Participation** | Does not actively create discussion but is present on social media sites to increase their reach. | Recognizes the importance of reaching the younger generation on social media platforms and |

| Theme | Subtheme | Canada | The Netherlands |
|---|---|---|---|
| | | Livestreams on YouTube primarily allowing for chat function. Moderates commenting to ensure online safety. | encourages them to consume their content there as opposed to linear programming. Livestreams on Twitch, primarily. Uses social media for more niche content. |
| | **Technology Enabled Accessibility** | Accessibility is implemented at the developer stage ensuring that all services are accessible to those with disabilities. Developers also have sensitivity training to ensure proper accessibility features. Also ensures that all Canadians can access the content no matter what cell reception they may have through CBC Lite. | Accessibility is implemented at the developer stage ensuring that all services are accessible to those with disabilities. Certain services are also available in simple Dutch or can be easily translated for those who do not yet speak the language. Initiatives are also being put in place to support those with dyslexia and ADHD. |
| **Diversity** | **Diversified Algorithms** | Utilizes collaborative filtering and session-based personalization to break filter bubbles. | Does not have a sophisticated personalization algorithm but creates diverse content and publishes on various platforms. |
| | **Online Spaces for Marginalized Communities** | Collaborates with international public service media to create online spaces that are safe for all to engage. Does not have a unified strategy for local online spaces. | Does not have a unified strategy for online spaces but continues to facilitate safe spaces through chat platforms such as Discord. |
| | **Partnerships with Local Groups** | Partners with minority groups to platform them and allow them to share their culture. | Partners with minority groups to platform them and allow them to share their culture. |
| | **Ethnic Community Podcasting** | Creates cultural content through podcasts to preserve language and heritage. Showcases various parts of the country in different podcasts. | Creates cultural content through podcasts to preserve language and heritage. Showcases various parts of the country in different podcasts. |

# 5.  Conclusions & Discussion

The overall aim of this research was to better understand how public service media use innovation to further their public service remit. This was achieved through the analysis of two case studies: Canada's CBC/Radio-Canada and the Netherlands' NPO and group of thirteen independent broadcasters. Through the thematic analysis of interviews with specialists who work amongst the public broadcasters in these countries and in analyzing publications, policy, press release, and news article documents, the following research question will be answered: *How do public service media in Canada and the Netherlands leverage digital technology to create public value?*

## 5.1.  Significant Findings

Firstly, the results outlined in the previous chapter imply that in leveraging digital technologies, public broadcasters in Canada and the Netherlands are able to foster specific dimensions of social cohesion, notably public participation, mutual understanding, and disparity reduction. In relying heavily on third-party platforms, specifically social media, both public broadcasters are able to create safe spaces for citizens to interact with their content as well as with each other. While the primary motive for their presence on these social platforms is to be able to tap into a younger audience, in doing so, they distribute content that represents the diverse fabric of both of their countries. Therefore, citizens not only have a better understanding of the diversity of individuals and opinions that surround them, but they also have the opportunity to suggest directly to the broadcasters the type of content they would like to see made, and also create spaces for citizens to engage in meaningful discussions with each other. While this is primarily achieved through live streaming and comment sections on Twitch and YouTube, discussion forums and chat platforms are also being used to achieve this such as Discord and Reddit. In heavily moderating the comments and replies on a public broadcaster's post or discussion feed, citizens, particularly those pertaining to a minority group, can feel safe to engage in meaningful conversations with their peers.

For broadcasters with robust personalization algorithms, such as CBC/Radio-Canada, fostering a sense of mutual understanding and cultural citizenship is achieved in distributing content that not only interests the end-user, but also recommends content outside of their direct community of interest, educating citizens on important topics within their nation. Through collaborative and session-based filtering techniques, public service media are able to encourage their citizens to understand each other and open their minds to diverse cultures and opinions, ultimately creating informed national citizens. Therefore, creating algorithms in-house is particularly important to be able to control biases and enable the discovery of information and content outside of one's direct interests and community. However, this

is not only achieved through algorithmic recommendation systems, but this can also be done through editorial decisions and distribution. While technology is not at the forefront of this strategy, online platforms allow for broadcasters to publish content that is relevant to smaller groups without the restrictions of linear TV and radio scheduling. Thus, for countries where linear broadcasting is still very important and that possess less personalization capabilities, in harmonizing their public broadcasting content to be both available on linear programs as well as online platforms allows for users to see the wide variety of content that is available to them. While it is not directly personalized to them, online platforms allow for searchability and the discoverability of this content.

The reduction of disparities is also an important dimension of social cohesion that is facilitated through digital technologies which can be achieved through technology-enabled accessibility. It is imperative for broadcasters in both of these countries to ensure that their services and programs are accessible to everyone, no matter their ability or geographical region. Due to changing media consumption patterns, public broadcasters need to be where their audience is and thus broadcasters of very large countries, such as Canada, develop platforms that are accessible to all, even for those with limited cellular connection. This is, however, less applicable to smaller countries where connection is almost always guaranteed. Beyond this, public service media need to ensure that there are no barriers in terms of accessibility to their content. Therefore, accessibility is implemented at the developer stage to ensure that all online services are created with accessibility in mind. This involves technologies such as described video, subtitles, translations, interpretation, and natural language recognition.

Secondly, public service media rely on digital innovation to provide their citizens with media diversity, specifically source, content, and exposure diversity. The primary way that media diversity is guaranteed is in leveraging platforms. In other words, through the creation of custom platforms or the collaboration with third-party platforms, public broadcasters can ensure diversity. Regarding source diversity, public service media are able to collaborate with local groups to share and publish their original stories to their many online platforms. In doing this, PSM are strengthening their bonds with minority communities by giving them the space to tell their own stories instead of sharing it on their behalf. This diversifies the source of information and ensures that the variety of content represents all groups within the country.

Platforms also allow for content diversity. As public service media are no longer constrained to linear TV and radio scheduling, leveraging on-demand platforms allow for broadcasters to create broad content that is relevant to society as a whole, but also niche content that provides value to minority groups. This flexibility ensures that all members of society are reflected and celebrated in both video and audio content, including different cultural groups, members of marginalized communities, citizens with

differing opinions, and individuals of all abilities. Exposure diversity can also be facilitated through platform technology. Through machine and deep learning technologies, public service media are able to personalize the distribution of their content to ensure that filter bubbles do not occur. In recommending programming that offers a diverse view of opinions and cultures, citizens can ultimately be more informed.

Finally, when it comes to balancing diversity and social cohesion, the two countries approach this slightly differently. Canada's strategy relies on developing and creating meaningful content that is representative and celebrates the diverse cultures and communities of interest within the country, while leveraging digital technologies to ensure that this content is universally accessible by all. In other words, diversity is mainly represented in the content that is created and the cohesion aspect lies within online distribution strategies. The Netherlands on the other hand still rely heavily on linear channels on both TV and Radio. Due to their limitations in terms of sophisticated personalization algorithms, broadcasters in the NPO can't offer collaborative filtering to offer diversified content to their audiences to break from the filter bubble. Thus, the Netherlands balances social cohesion and diversity by creating diverse content for both the broader audience and niche groups to subsequently publish on different channels and depend on the audience to make informed decisions on the content they consume.

Ultimately, the significant findings that have been discussed present an overarching view of the primary strategies that public service media institutions use to create social cohesion and diversity. To answer the primary research question of *how public service media in Canada and the Netherlands leverage digital technologies to create public value*, it is important to consider both the Canadian and Dutch case studies. In all, public service media use digital technologies as modern tools for distribution to deliver content that has value. In leveraging certain technologies, such as platforms and machine learning, public service media are able to ensure that citizens receive diverse and relevant information to foster diversity, democratic participation, and mutual understanding.

## 5.2. Theoretical Implications

In all, the way that public service media leverage digital technologies to create diversity and social cohesion is in line with academic discussion. However, when considering the two case studies, their approaches differ slightly. Overall, both Canada and the Netherlands are congruent with academic theory when discussing how they leverage digital technology to create public value. Regarding social cohesion, both Canada and the Netherlands recognize the value of external platforms to help further their social responsibilities, and this is reflected in their distribution strategies. In expanding their reach, public broadcasters are able to be more universal in their content delivery and create content on commercial

platforms that have value to the public (Lindeberg & Ala-Fossi, 2023, pp. 162-163; Kyianytsia, 2022, p. 65). This can be accounted to the fact that social media is unavoidable in current digital strategies and public service media would be remiss not to capitalize on the reach and capabilities of social platforms. However, with on-demand platforms, the two cases differ, with CBC/Radio-Canada collaborating with video and audio companies, such as Netflix and Spotify, where the Netherlands relies more on their own video platforms, while still opting to stream their audio services to Spotify. This implies that when it comes to video, the Netherlands is still closely linked to their linear channels and online platform, whereas Canada has many custom-built platforms yet continues to increase their reach through popular media services.

Additionally, as outlined by Stieglitz & Roß (2022, pp. 105-106) these public broadcasters use these partnerships with social media platforms to incite democratic discussion and public participation as mentioned in academic discussion. Falling in line with Ammari et al. (2022, p. 22), they do so by creating a safe space for individuals to communicate using moderation technologies. While it can be argued that moderation can be viewed as censorship, PSM take advantage of moderation technology to ensure that they are acting on their democratic responsibilities of creating meaningful discussion to create mutual understanding. In using social media as virtual town squares, public service media are able to moderate content to ensure a safe space and encourage further discussion.

Moreover, to increase the accessibility of online content and services, both Canada and the Netherlands use accessibility technologies to ensure that they are able to serve every citizen equitably to reduce disparities in society (Hutchinson, 2015; Kablan et al., 2015, p. 396; Csontos & Heckl, 2020, p. 139; García-Prieto et al., 2022, p. 121). While they are mandated to ensure that their services are accessible by all, in implementing accessibility at the developer stage, it ensures that there are no oversights, and that accessibility is not an afterthought.

Regarding diversity, both Canada and the Netherlands follow academic theory in almost every dimension. In terms of collaborating with local groups, both cases ensure to give voice to marginalized communities and to co-create content with them (Wenzel, 2023, p. 2640). Both cases also ensure that these underrepresented groups find communities online to share their needs and create connections (Kavoura, 2014, pp. 98-99; Burton, 2020, p. 911; Rojas-Torrijos & Ramón, 2021, p. 229; Fuchs, 2014, p. 73). Online audio content is also being used to tell cultural stories of minority groups and to be able to distribute them on-demand Aufderheide et al., 2020, p. 1684; Harris, 2019, p. 16).

Both Canada and the Netherlands don't align with theory when it comes to the use of conversational chatbots to deliver content and create public participation (Sørensen & Hutchinson, 2018,

p. 94; Jones & Jones, 2019, p. 1049). Interviewees expressed the possibility of using this technology in the future, with the Netherlands researching it as an alternative distribution technique. The Netherlands also does not currently have the capabilities for both collaborate filtering and diversified algorithms due to privacy restrictions from the government, thereby not supporting relevant theory, while Canada develops sophisticated algorithms in-house to combat filter bubbles (Matema & Kariuki, 2022, p. 7; Sørensen & Hutchinson, 2018, pp. 93-101; Hildén, 2021 pp. 777-787; Karimi et al., 2018, p. 1206; Hildén, 2021 p. 787; Helberger, 2019, p. 1004; Donders, 2019, p. 3). It is very clear that the Netherlands still heavily relies on linear broadcasting while complementing it with online capabilities. However, it can be argued that in not hyper-personalizing content, the Netherlands is, in fact, not creating filter bubbles and therefore has less to combat. While most literature outlines the various ways public broadcasters are utilizing technology, it is important to consider the organizations that have effective traditional techniques. While the Netherlands understands the benefits of social TV, Canada, on the other hand currently does not have any unified strategy to create meaningful content surrounding, thus not following academic discussion (Hutchinson, 2015, pp. 89-90; Van Dijck & Poell, 2014, p. 155). This can be attributed to the fact that Canada seems to be transitioning more towards an online-focussed strategy with traditional broadcasting still in the background, whereas the Netherlands has linear radio and TV as a primary strategy, with online capabilities complementing it.

## 5.3.    Limitations

While reliability and validity were ensured due to academic reasoning outlined in Chapter 3, it is still imperative to consider any limitations that this research may possess. Firstly, when it comes to the selection of interview candidates, to ensure a well-rounded understanding of the utilization of digital technologies for public value amongst these public broadcasters, a more diverse sample of interviewees would be beneficial. While each interview subject provided very insightful, relevant, and helpful information, the overview of their knowledge could occasionally be myopic due to the nature of their work. For Case Study 1: Canada, having interviewed directors from both CBC and the corporate branch offered in-depth understanding of an overarching view as well as anglophone services. However, in additionally interviewing specialists from within Radio-Canada, a better knowledge of CBC/Radio-Canada's francophone efforts would further contribute to the validity of this research. Additionally, due to the nature of the public broadcasting system within Case Study 2: The Netherlands, it was not within the scope of this research to interview individuals from all thirteen public broadcasters and its governing body, NPO. Another limitation in interviews from the Dutch public broadcasters was the specialization of the majority of the interviewees. While understanding content strategy is important to further this research, including more insights from digital professionals would benefit the research. To avoid this, a

single case study approach would be appropriate to have a more in-depth knowledge of both public broadcasting systems, however for the purposes of this research, the data gathered was sufficient to answer the research questions.

Secondly, while the selection of the case studies resulted in interesting findings and offered a diverse view of public broadcasters across continents, the two cases selected are both Western countries with similar views on diversity and social cohesion. Thus, it can be argued that the two countries don't have enough differences to offer two concrete views on how public service media use digital technologies for public value. However, in researching the two cases, it becomes clear that while they have similar approaches to public value, they are part of different media systems and approach digital innovations differently, thus offering a good understanding of different public service media.

## 5.4. Societal Relevance

The conceptual model that was developed for this research can aid public media institutions in understanding how their peer broadcasters are implementing technology to further their social responsibilities. To deepen their knowledge, this thesis outlines how public service media in Canada and the Netherlands are and are not using digital technologies and can thus be framed as a benchmark for other public broadcasters. Using this conceptual model as a tool for measuring their own digital capabilities can aid broadcasters in their own research of pertinent and relevant technological advancements. This research can also be shared not only with digital innovators within public broadcasters, but also with editorial and strategic employees who work closely to create values such as social cohesion and diversity, but who are not directly involved in technology to understand current trends and potentially implement them into their own work.

Additionally, since public service media are at risk due to decreasing relevancy, in implementing the digital technologies outlined in the conceptual model, broadcasters can be important contenders in the commercial market and provide public value in the places where commercial media companies do not. In keeping up with innovation, PSM can maintain their position of trust, legitimacy, and relevance on an international stage. In sum, the use of digital innovations within public service media and the broader public sphere ensures that these institutions remain relevant and reach their target audiences to ultimately deliver quality content and services. Since the public sector is a driver of public value (Urbániková, 2023, p.1352), this research provides public service media with the tools to evaluate their own digital capabilities and to apply them in innovative ways to create public value and differentiate themselves from their commercial counterparts.

## 5.5.    Future Research

Since this research focuses on current ways that public service media are implementing technology to create value, there is a lot of focus surrounding third-party platforms and social media. For future research, it could be interesting to see how emerging technologies such as AI or virtual reality (VR) could impact on the way public service media deliver on their social responsibilities. While public service media are already using machine and deep learning capabilities for their recommendation systems, other facets of artificial intelligence could be implemented at the editorial phase to fully personalize content to the individual. An interesting application of AI in public broadcasting is the notion of "object-based media" in which information is generatively summarized and personalized to the individual depending on the context in which they are consuming the media, whether they have five minutes or fifteen minutes of time to dedicate to public media consumption (Fieiras-Ceide et al., 2022, p. 5). The BBC is currently exploring this technology and it would be interesting to see its applications in terms of exposure diversity and collaborative filtering (Fieiras-Ceide et al., 2022, p. 5).

Another interesting application of new technologies in public service media that warrants future research lies within virtual reality. As mentioned in the previous chapter, the Dutch broadcaster EO created a virtual church within the Metaverse to reach a younger audience. The development of virtual spaces goes beyond chatrooms and online town squares and therefore with the increasing popularity of the Metaverse and other VR platforms, public broadcasters are able to reach new audiences and innovate in unique ways. This can also be translated into the newsroom with the development of virtual news anchor avatars within the Metaverse (Chen, 2023, p. 470).  Digital innovations are at the forefront of modern media consumption habits across the world and to maintain relevancy and create value, it is imperative that public service media leverage these technologies.

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# Appendix

## Appendix A: Units of Analysis

**Canada**:

| Theme | Sub-Theme | Source |
|---|---|---|
| **Social Cohesion** | **Collaborative Filtering** | Interview Transcripts with interviewees 1-3. |
| | | Berry, C. (2018, October 5). *Recommending social cohesion*. RecSys 2018, Vancouver, British Columbia, Canada. https://doi.org/10.1145/3240323.3267110 |
| | | CBC/Radio-Canada. (2019). *Your stories, taken to heart: Our 2019-2024 strategic plan*. https://site-cbc.radio-canada.ca/documents/vision/strategy/2019-strategic-plan-en.pdf |
| | | CBC/Radio-Canada. (2023a). *Annual Report 2022-2023*. https://site-cbc.radio-canada.ca/documents/impact-and-accountability/finances/2023/2022-2023-Annual-Report.pdf |
| | | CBC/Radio-Canada. (2023b). *Corporate Plan Summary: 2023-2024 to 2027-2028*. https://site-cbc.radio-canada.ca/documents/impact-and-accountability/finances/2023/Corporate-Plan-Summary-2023-2024.pdf |
| | | Cornell, J. (2018). The public service algorithm: Personalization at the CBC. *CBC Digital Labs*. https://medium.com/cbc-digital-labs/the-public-service-algorithm-personalization-at-the-cbc-e70388638c5b |
| | | Fujimura, R. (2023). How we balance relevance and surprise in AI-generated content recommendations. *CBC Digital Labs*. https://medium.com/cbc-digital-labs/how-we-balance-relevance-and-surprise-in-ai-generated-content-recommendations-bdf9b3fae15c |
| | **Conversational Chatbots** | Interview Transcripts with interviewees 1-3. |
| | | CBC News. (2019). CBC's chat bot helps you spot "fake news" — and avoid spreading it. *CBC*. https://www.cbc.ca/news/politics/chat-bot-canada-federal-election-disinformation-1.5270765 |
| | | CBC/Radio-Canada. (2021). *CBC/Radio-Canada Annual Report 2020-2021*. https://site-cbc.radio-canada.ca/documents/impact-and-accountability/finances/2020-2021-annual-report.pdf |

| Theme | Sub-Theme | Source |
|---|---|---|
| | | Morgan, M. (2019, September 19). Canadian broadcaster launches fake-news chat bot. *BBC*. https://www.bbc.com/news/blogs-news-from-elsewhere-49735528 |
| | | Zvobgo, F. (2023, December 16). Innovation at CBC — Introducing CBC News for Alexa routines. *CBC Digital Labs*. https://medium.com/cbc-digital-labs/innovation-at-cbc-introducing-cbc-news-for-alexa-routines-9d116dc3f538 |
| | **Digital Collaboration with External Platforms** | Interview Transcripts with interviewees 1-3.<br>CBC/Radio-Canada. (2019). *Your stories, taken to heart: Our 2019-2024 strategic plan*. https://site-cbc.radio-canada.ca/documents/vision/strategy/2019-strategic-plan-en.pdf |
| | | CBC/Radio-Canada. (2022a, November 15). *National public broadcasters ABC and CBC/Radio-Canada announce Kindred Animation Co-productions and Renew Partnership Agreement - CBC Media Centre* [Press release]. www.cbc.ca. https://www.cbc.ca/mediacentre/press-release/abc-and-cbc-radio-canada-announce-kindred-animation-co-productions-and-rene |
| | | CBC/Radio-Canada. (2023a). *Annual Report 2022-2023*. https://site-cbc.radio-canada.ca/documents/impact-and-accountability/finances/2023/2022-2023-Annual-Report.pdf |
| | | CBC/Radio-Canada. (2023b). *Corporate Plan Summary: 2023-2024 to 2027-2028*. https://site-cbc.radio-canada.ca/documents/impact-and-accountability/finances/2023/Corporate-Plan-Summary-2023-2024.pdf |
| | | CBC/Radio-Canada. (2023d, February 8). *PUBLIC BROADCASTERS COLLABORATE TO RECLAIM ONLINE PUBLIC SPACES WITH CREATION OF "PUBLIC SPACES INCUBATOR"* [Press release]. www.cbc.ca. https://www.cbc.ca/mediacentre/press-release/public-broadcasters-collaborate-to-reclaim-online-public-spaces-with-creati |
| | | CBC/Radio-Canada. (2023f, July 19). *CBC PODCASTS LAUNCHES NEW STREAMING CHANNEL ON YOUTUBE - CBC Media Centre* [Press release]. www.cbc.ca. https://www.cbc.ca/mediacentre/press-release/cbc-podcasts-launches-new-streaming-channel-on-youtube |

| Theme | Sub-Theme | Source |
|---|---|---|
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| | **Social TV** | Interview Transcripts with interviewees 1-3. |
| | | CBC/Radio-Canada. (2023i, December 29). *SHE SHOOTS, SHE SCORES! CANADA'S NATIONAL PUBLIC BROADCASTER PARTNERS WITH THE PROFESSIONAL WOMEN'S HOCKEY LEAGUE TO BRING ITS INAUGURAL SEASON TO AUDIENCES ACROSS THE COUNTRY ON CBC AND RADIO-CANADA - CBC Media Centre* [Press release]. www.cbc.ca. https://www.cbc.ca/mediacentre/press-release/she-shoots-she-scores-canadas-national-public-broadcaster-partners-with-the |
| | **Encouraging Online Participation** | Interview Transcripts with interviewees 1-3. |
| | | CBC/Radio-Canada. (2021). *CBC/Radio-Canada Annual Report 2020-2021*. https://site-cbc.radio-canada.ca/documents/impact-and-accountability/finances/2020-2021-annual-report.pdf |
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| Theme | Sub-Theme | Source |
|---|---|---|
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| | **Diversified Algorithms** | Interview Transcripts with interviewees 1-3. |
| | | CBC/Radio-Canada. (2019). *Your stories, taken to heart: Our 2019-2024 strategic plan*. https://site-cbc.radio-canada.ca/documents/vision/strategy/2019-strategic-plan-en.pdf |
| | | Cornell, J. (2018). The public service algorithm: Personalization at the CBC. *CBC Digital Labs*. https://medium.com/cbc-digital-labs/the-public-service-algorithm-personalization-at-the-cbc-e70388638c5b |
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| **Diversity** | **Online Spaces for Marginalized Communities** | Interview Transcripts with interviewees 1-3. |
| | | CBC/Radio-Canada. (2023a). *Annual Report 2022-2023*. https://site-cbc.radio-canada.ca/documents/impact-and-accountability/finances/2023/2022-2023-Annual-Report.pdf |
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| | | CBC/Radio-Canada. (2023d, February 8). *PUBLIC BROADCASTERS COLLABORATE TO RECLAIM ONLINE PUBLIC SPACES WITH CREATION OF "PUBLIC SPACES INCUBATOR"* [Press release]. www.cbc.ca. https://www.cbc.ca/mediacentre/press-release/public-broadcasters-collaborate-to-reclaim-online-public-spaces-with-creati |
| | **Multi-Channel Collaborations with Local Groups** | Interview Transcripts with interviewees 1-3. |
| | | CBC/Radio-Canada. (2019). *Your stories, taken to heart: Our 2019-2024 strategic plan*. https://site-cbc.radio-canada.ca/documents/vision/strategy/2019-strategic-plan-en.pdf |

| Theme | Sub-Theme | Source |
|-------|-----------|--------|
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| **Ethnic Community Podcasts** | | Interview Transcripts with interviewees 1-3. |
| | | CBC/Radio-Canada. (2023c). *Enviroscan 2023*. https://site-cbc.radio-canada.ca/documents/vision/strategy/latest-studies/2023-enviroscan-media-review.pdf |
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| | | Tait, C. (2024). Progress on our journey. *Between Us*. https://cbc.radio-canada.ca/en/your-public-broadcaster/blog/between-us-february-2024 |

**The Netherlands:**

| Theme | Sub-Theme | Source |
|---|---|---|
| **Social Cohesion** | **Collaborative Filtering** | Interview Transcripts with interviewees 4-7.<br><br>NPO. (2022b). *Concession Policy Plan 2022 - 2026 [Concessiebeleidsplan 2022 - 2026]*. https://npo.nl/overnpo/openbare-documenten?document=17<br><br>NPO. (2022d, August 31). AI in the Media [AI in de Media]. *NPO Innovatie*. https://npo.nl/innovatie/nieuws/ai-in-de-media |
| | **Conversational Chatbots** | Interview Transcripts with interviewees 4-7.<br><br>NPO. (n.d.-g). Making archives accessible via conversational AI [Archief toegankelijk maken via conversational AI]. *NPO Innovatie*. https://npo.nl/innovatie/projecten/archief-toegankelijk-maken-via-conversational-ai<br><br>NPO. (n.d.-j). NOS Conversational Interfaces. *NPO Innovatie*. https://npo.nl/innovatie/projecten/nos-conversational-interfaces<br><br>NPO. (2022e, August 31). Talk to the Eurovision Song Contest! [Praat met het Songfestival!]. *NPO Innovatie*. https://npo.nl/innovatie/nieuws/praat-met-het-songfestival |
| | **Digital Collaborations with External Platforms** | Interview Transcripts with interviewees 4-7.<br><br>Commissariaat voor de Media. (2008). *Media Act 2008*. https://www.cvdm.nl/wp-content/uploads/2022/06/Dutch-Media-Act-2008.pdf<br><br>NPO. (2020). *Notification of experiment NPO Listen [Kennisgeving experiment NPO Luister]*. https://npo.nl/overnpo/openbare-documenten?document=21<br><br>NPO. (2022b). *Concession Policy Plan 2022 - 2026 [Concessiebeleidsplan 2022 - 2026]*. https://npo.nl/overnpo/openbare-documenten?document=17 |
| | **Social TV** | Interview Transcripts with interviewees 4-7.<br><br>NPO. (n.d.-c). Ask the News Hour [Vraag het Nieuwsuur]. *NPO Innovatie*. https://npo.nl/innovatie/projecten/vraag-het-nieuwsuur<br><br>NPO. (n.d.-e). First Dates on Twitch [First dates op Twitch]. NPO Innovatie. https://npo.nl/innovatie/projecten/first-dates-op-twitch<br><br>NPO. (n.d.-l). Wadoeje on Zapp [Wadoeje op Zapp]. *NPO Innovatie*. https://npo.nl/innovatie/projecten/wadoeje-op-zapp<br><br>NPO. (2022b). *Concession Policy Plan 2022 - 2026 [Concessiebeleidsplan 2022 - 2026]*. https://npo.nl/overnpo/openbare-documenten?document=17 |

| Theme | Sub-Theme | Source |
|---|---|---|
| | **Encouraging Online Participation** | Interview Transcripts with interviewees 4-7. |
| | | NPO. (n.d.-d). BEAM on Discord [BEAM op Discord]. *NPO Innovatie*. https://npo.nl/innovatie/projecten/beam-op-discord |
| | | NPO. (n.d.-f). FunX on TikTok [FunX op TikTok]. *NPO Innovatie*. https://npo.nl/innovatie/projecten/funx-op-tiktok] |
| | | NPO. (n.d.-h). Metaverse Church [Metaverse kerk]. *NPO Innovatie*. https://npo.nl/innovatie/projecten/metaverse-kerk |
| | | NPO. (n.d.-i). News Hour on Threads [Nieuwsuur op Threads]. *NPO Innovatie*. https://npo.nl/innovatie/projecten/nieuwsuur-op-threads |
| | | NPO. (n.d.-k). Reddit. *NPO Innovatie*. https://npo.nl/innovatie/projecten/reddit |
| | | NPO. (n.d.-m). Waku Waku in Roblox. *NPO Innovatie*. https://npo.nl/innovatie/projecten/waku-waku-in-roblox |
| | | NPO. (n.d.-n). Youth News on Roblox [Jeugdjournaal op Roblox]. *NPO Innovatie*. https://npo.nl/innovatie/projecten/jeugdjournaal-op-roblox |
| | | NPO. (2023a, July 10). Twitch Learnings. *NPO Innovatie*. https://npo.nl/innovatie/nieuws/twitch-learnings |
| | **Technology-Enabled Accessibility** | Interview Transcripts with interviewees 4-7. |
| | | Commissariaat voor de Media. (2008). *Media Act 2008*. https://www.cvdm.nl/wp-content/uploads/2022/06/Dutch-Media-Act-2008.pdf |
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| | **Diversified Algorithms** | Interview Transcripts with interviewees 4-7. |
| | | Commissariaat voor de Media. (2008). *Media Act 2008*. https://www.cvdm.nl/wp-content/uploads/2022/06/Dutch-Media-Act-2008.pdf |
| | | NPO. (2022b). *Concession Policy Plan 2022 - 2026 [Concessiebeleidsplan 2022 - 2026]*. https://npo.nl/overnpo/openbare-documenten?document=17 |
| **Diversity** | **Online Spaces for Marginalized Communities** | Interview Transcripts with interviewees 4-7. |
| | | NPO. (n.d.-a). 101BARZ. *NPO Innovatie*. https://npo.nl/innovatie/projecten/101barz |
| | | NPO. (n.d.-d). BEAM on Discord [BEAM op Discord]. *NPO Innovatie*. https://npo.nl/innovatie/projecten/beam-op-discord |
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| | | NPO. (2023c, November 22). NPO Innovatie - Community Talk. *NPO Innovatie*. https://npo.nl/innovatie/nieuws/npo-innovatie-community-talk |
| | | NPO. (2024, February 19). Innovation Agenda 2024-2025 [Innovatieagenda 2024-2025]. *NPO Innovatie*. https://npo.nl/innovatie/nieuws/innovatieagenda-2024-2025 |
| | **Multi-Channel Collaborations with Local Groups** | Interview Transcripts with interviewees 4-7. |
| | | NPO. (2022a). *Annual Report 2022 [Jaarverslag 2022]*. https://npo.nl/overnpo/openbare-documenten?document=13 |
| | | NPO. (2022b). *Concession Policy Plan 2022 - 2026 [Concessiebeleidsplan 2022 - 2026]*. https://npo.nl/overnpo/openbare-documenten?document=17 |
| | **Ethnic Community Podcasting** | Interview Transcripts with interviewees 4-7. |
| | | NPO. (n.d.-f). FunX on TikTok [FunX op TikTok]. *NPO Innovatie*. https://npo.nl/innovatie/projecten/funx-op-tiktok |

| Theme | Sub-Theme | Source |
|-------|-----------|--------|

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Public Media Alliance. (2022a, February 14). Five public media audio trends to keep an eye on in 2022. *Public Media Alliance*. https://www.publicmediaalliance.org/five-public-media-audio-trends-to-keep-an-eye-on-in-2022/

# Appendix B: Interview Questionnaire

**Introduction**

I would first like to say thank you again for participating in my research. My name is Nicole and I'm studying my master's in Media & Business at Erasmus University Rotterdam. The focus of my master's thesis is how public service media in Canada and the Netherlands leverage digital technologies to create public value. More specifically, my research focuses on the creation of diversity and social cohesion, and how public broadcasters balance the two.

Just as a reminder, if you feel uncomfortable, you are welcome to stop the interview at any moment. Also, if you do not want to answer any of the questions, we can gladly skip over them. This interview is recorded. All data will be stored in a secure database and will only be used in academic purposes. Outside of a general description about yourself, all answers you provide will be anonymized in the final research. If you want to retract or change any comments you made, please reach out to me and this can be done at any time.

This interview will be structured in three sections. We'll start with some more general and introductory questions, before diving into a section regarding social cohesion then finishing with diversity. Do you have any initial questions?

**Introduction Question**

- Before we begin, could you please tell me a bit about your experience and your role at CBC/NPO?

**General questions:**

- How does CBC/NPO define public value? How is this reflected in your digital strategy?
- When it comes to content creation and distribution, how does CBC/NPO strike a balance between diverse content that represents the multicultural landscape of the country with fostering social cohesion under one unified identity?
- What digital technologies do you see as most promising for enhancing your public service remit?

**Social Cohesion:**

In my research, certain themes emerged when understanding what kind of technologies are used to foster social cohesion. This section will run through these themes found through theory.

| Collaborative Filtering | • How does CBC/NPO currently utilize collaborative filtering techniques to promote social cohesion within communities? |
|---|---|

| Conversational Chatbots | • How does CBC/NPO currently use conversational chatbots to incite public participation? |
|---|---|
| Digital Collaboration with External Platforms | • What do you want to achieve from collaborating with external platforms? How does this align with the goal of social cohesion? |
| Social TV | • How does CBC/NPO create meaningful discussion on social media about their televised programming? |
| Encouraging Online Participation | • What kind of social media content do you create to promote dialogue and understanding amongst diverse groups?<br>• How does CBC/NPO incite public participation through online strategies? |
| Technology-Enabled Accessibility | • What specific technologies have you implemented to enhance accessibility for diverse audiences, including those with disabilities, ensuring that everyone has equitable access to your services? |

**Diversity:**

In my research, certain themes emerged when understanding what kind of technologies are used to foster diversity. This section will run through these themes found through theory.

| Diversified Algorithms | • How does the CBC/NPO deal with filter bubbles?<br>• How can CBC/NPO guarantee exposure diversity through diversified algorithms? |
|---|---|
| Online Spaces for Marginalized Communities | • How does CBC/NPO leverage technology to foster an online community where individuals in marginalized communities can come together?<br>• How does the CBC/NPO ensure marginalized voices are heard? |
| Multi-Channel Collaborations with Local Groups | • How does CBC/NPO collaborate with local groups or smaller broadcasters to showcase more diverse voices and languages? |
| Ethnic Community Podcasts | • How does CBC/NPO highlight ethnic and linguistic communities through your online audio services? |

Thank you once again for your participation in my research. As a reminder, if you change your mind about any of your answers, please don't hesitate to reach out to me. I will also be sending you a report in July of 2024 with my findings. Thank you.

# Appendix C: Interviewee Descriptions

**Canada:**

**Christopher Berry**
Former Director, Product Intelligence
*CBC/Radio-Canada*

Christopher is the former Director of Product Intelligence at CBC/Radio-Canada, working there for over seven years between 2014 and 2021. During his tenure, Christopher helped build machine intelligence and retention, customer data platform, multivariate testing, and product analytics capabilities at CBC/Radio-Canada. Currently, he is the Chief Operating Officer of Source, a company focusing on data management and privacy.

**Richard Kanee**
Executive Director, Digital Strategy & Product
*CBC/Radio-Canada*

Richard is the Executive Director of Digital Strategy and Product at CBC/Radio-Canada's English services. Richard has worked mainly with large Canadian media corporations, such as Much Music and Bell Media, and has been working for the past ten years with Canada's Public Broadcaster. With a team of over 200, Richard leads digital strategy and transformation, product management, design and engineering, digital business, and data operations.

**Soo Kim**
Executive Director, Transformation Office
*CBC/Radio-Canada*

Soo is the Executive Director of the Transformation Office at CBC/Radio-Canada. She has been working with Canada's public broadcaster since 2006 and has held positions such as Senior Director, Digital Operations and Executive Director, Media Operations. Now with the Transformation Office, her team focuses on process improvement and change management within CBC/Radio-Canada.

**The Netherlands:**

**Annemiek Spronk**
Content Manager
*NPO*

Annemiek has been working for over two years at the NPO. She was originally brought on as a Genre Manager in Knowledge, Education, and Philosophy and has since transitioned to a Content Manager. In her role, she is responsible for selecting and programming content for the TV channel,

NPO2. Previously, Annemiek has worked in the museum and education fields at organizations such as the Rijksmuseum and Tropenmuseum.

**Carmen Fernald**
Editor-in-chief, Philosophy of Life & Caribbean Network
*NTR*

Carmen is the Editor-in-chief of Philosophy of Life & Caribbean Network at NTR. For the past two years, she has been managing three departments: philosophy of life where they broadcast content around Hinduism and Islam, an online platform for refugees, and the Caribbean network, an online news platform about the six Caribbean islands that are part of the Kingdom of the Netherlands. Carmen has previously worked with MAX for over eight years, another public broadcaster in the Netherlands.

**Joep Aerts**
Online Content Coordinator
*NPO*

Joep has worked for NPO for almost three years where he is currently an Online Content Coordinator. Previously, he has held roles at NPO such as Online Programmer and Online Content Editor for NPO3. He is specialized in online media and series. Joep is responsible for selecting the online programming proposed by the thirteen public allocating which programs get created. Before working at NPO, Joep worked at NTR as a Marketing Specialist.

**Wilko van Iperen**
Head of Data, Innovation & Development
*BNNVARA*

Wilko is the Head of Data, Innovation and Development at BNNVARA where he has been working for ten years. He is responsible for the online strategy for the broadcaster, provides the company with insights to perform better, and develops innovative media concepts to fill attract younger audience and develop future-proof strategies. Previously, Wilko has also worked at KRO-NCRV and VARA (before the merger with BNN).

Please note: To ensure anonymity, the interviewees are listed in alphabetical order per country and in no way reflects the numbering of the interviews in Chapter 4 of this thesis.

# Appendix D: Coding Framework

| Theme | Subtheme | Codes |
|---|---|---|
| **Social Cohesion** | Collaborative Filtering | Connections |
| | | In-house algorithms |
| | | Societal view |
| | | Session based filtering |
| | | Collaborative filtering |
| | Conversational Chatbots | Generative chatbots |
| | | Distribution |
| | | Smart devices |
| | | Future plans |
| | | Discussion platform |
| | Digital Collaboration with External Platforms | Reach |
| | | Channels |
| | | Global market |
| | | International Broadcasters |
| | Social TV | YouTube |
| | | Livestream |
| | | Future plans |
| | Encouraging Online Participation | Short form video |
| | | Moderation |
| | | Livestreams |
| | Technology-Enabled Accessibility | Developer stage |
| | | Accessible technologies |
| | | Low-cell service accessibility |
| **Diversity** | Diversified Algorithms | Filter bubbles |
| | | Recommendation systems |
| | Online Spaces for Marginalized Communities | Mutual engagement |
| | | International partnerships |
| | Multi-Channel Collaborations with Local Groups | Minority voices |
| | | Increase reach |
| | | Uplift |
| | Ethnic Community Podcasts | On-demand |
| | | Traditional Radio |
| | | Cultural content |

## Appendix E: Informed Consent Form

## CONSENT REQUEST FOR PARTICIPATING IN RESEARCH

**FOR QUESTIONS ABOUT THE STUDY, CONTACT:**
Nicole Neagu: 692200nn@student.eur.nl

**DESCRIPTION**

You are invited to participate in research about public service media and public value. The purpose of this study is to understand how public service media in Canada and the Netherlands leverage digital technologies to create public value, notably diversity and social cohesion, and to understand how they balance the two.

Your acceptance to participate in this study means that you accept to be interviewed. In general, my questions will be related to the various ways that technology is being employed in public service media to achieve diversity and social cohesion.

Unless you prefer that no recordings are made, I will make an audio and video recording of the interview.

I will use the material from the interviews and my observation exclusively for academic work, such as further research, academic meetings and publications.

**RISKS AND BENEFITS**

As far as I can tell, there are no risks associated with participating in this research. Your responses will be anonymized, and your information (name, occupation, and description) will be present in the appendix, but no identifiable information will be used in the results of this research.

**TIME INVOLVEMENT**

Your participation in this study will take one hour. You may interrupt your participation at any time.

**PAYMENTS**

There will be no monetary compensation for your participation.

**PARTICIPANTS' RIGHTS**

If you have decided to accept to participate in this project, please understand your participation is voluntary and you have the right to withdraw your consent or discontinue participation at any time without penalty. You have the right to refuse to answer particular questions. If you prefer, your identity will be made known in all written data resulting from the study. Otherwise, your individual privacy will be maintained in all published and written data resulting from the study.

**CONTACTS AND QUESTIONS**

If you have questions about your rights as a study participant or are dissatisfied at any time with any aspect of this study, you may contact –anonymously, if you wish— Matthijs Leendertse, Erasmus School of History, Culture and Communications, leendertse@eshcc.eur.nl.

**SIGNING THE CONSENT FORM**

In order to minimize risks and protect your identity, you may prefer to consent orally. Your oral consent is sufficient.

I give consent to be recorded during this study:

Name                                    Signature                                    Date

I prefer my identity to be revealed in all written data resulting from this study


Name                                    Signature                                    Date

This copy of the consent form is for you to keep.

# Appendix F: AI Declaration

**Student Information**
Name: Nicole Neagu
Student ID: 692200
Course Name: Master Thesis CM5000
Supervisor Name: Matthijs Leendertse
Date: 27.06.2024

Declaration:

**Acknowledgment of Generative AI Tools**
I acknowledge that I am aware of the existence and functionality of generative artificial intelligence (AI) tools, which are capable of producing content such as text, images, and other creative works autonomously.

GenAI use would include, but not limited to:
- Generated content (e.g., ChatGPT, Quillbot) limited strictly to content that is not assessed (e.g., thesis title).
- Writing improvements, including grammar and spelling corrections (e.g., Grammarly)
- Language translation (e.g., DeepL), without generative AI alterations/improvements.
- Research task assistance (e.g., finding survey scales, qualitative coding verification, debugging code)
- Using GenAI as a search engine tool to find academic articles or books

☒ I declare that I have used generative AI tools, specifically ChatGPT, Quillbot, DeepL, Google Translate, Elicit, Scribbr in the process of creating parts or components of my thesis. The purpose of using these tools was to aid in generating content or assisting with specific aspects of thesis work.

☐ I declare that I have NOT used any generative AI tools and that the assignment concerned is my original work.

**Extent of AI Usage**
☒ I confirm that while I utilized generative AI tools to aid in content creation, the majority of the intellectual effort, creative input, and decision-making involved in completing the thesis were undertaken by me. I have enclosed the prompts/logging of the GenAI tool use in an appendix.

**Ethical and Academic Integrity**
☒ I understand the ethical implications and academic integrity concerns related to the use of AI tools in coursework. I assure that the AI-generated content was used responsibly, and any content derived from these tools has been appropriately cited and attributed according to the guidelines provided by the instructor and the course. I have taken necessary steps to distinguish between my original work and the AI-generated contributions. Any direct quotations,

paraphrased content, or other forms of AI-generated material have been properly referenced in accordance with academic conventions.

By signing this declaration, I affirm that this declaration is accurate and truthful. I take full responsibility for the integrity of my assignment and am prepared to discuss and explain the role of generative AI tools in my creative process if required by the instructor or the Examination Board. I further affirm that I have used generative AI tools in accordance with ethical standards and academic integrity expectations.

Prompts that have been used, following the university internal Canvas page "Use of AI" (https://canvas.eur.nl/courses/45108/pages/use-of-ai):

- Can you please find me recent articles on X.
- Can you please summarize X.
- Can you please explain X in other words.
- Can you please make a title for X section.
- This is the topic of my thesis, can you please make a title.
- Can you please check the punctuation and grammar for X.

Signature:

Date of Signature: 27.06.2024