Original Article

Public service media, universality and personalisation through algorithms: mapping strategies and exploring dilemmas

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Abstract
This contribution compares personalisation strategies of public service media (PSM) and how these are reconciled with PSM's core values, especially universality. To this end, it combines mapping of a sample of PSM with in-depth analysis of Flemish VRT and Norwegian NRK. The theoretical framework discusses universality in relationship to PSM's historical remit and to contemporary personalisation through digital options like algorithms. Subsequently, strategies of the sampled PSM are analysed, using data from documents, an online survey and interviews. Results suggest that most PSM, including VRT and NRK, engage in implicit and explicit digital personalisation, yet vary in type of engagement and in views on how personalisation strengthens or threatens universality. It is argued that histories and the understanding of technology within specific institutions affect their personalisation approach. We argue that policies focus on news and information but that negotiating universality and personalisation, while dealing with issues like filter bubbles and privacy, extends to the entire range of PSM programmes and goals.

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Introduction

This contribution analyses policies and strategies for personalisation, that is, the more effective targeting of specific audiences – of European public service media (PSM) in general, using the Flemish (VRT) and Norwegian (NRK) institutions as case studies. The aim is to understand if and how typical PSM core values, especially universality, can be reconciled with digitally enhanced personalisation.

It has become commonplace to talk about the saturation of everyday life with media, with ubiquitous offerings of (commercial) content, including news, information and entertainment. Yet, dealing with and giving attention to content surplus is not a new phenomenon. As early as the 1950s, psychologists discussed the consequences of information excess for individuals (Miller, 1956), and economists built models explaining how people sort and utilize such information (Downs, 1957).

A diachronic look at media developments shows that every new medium is accompanied by the perception of abundance. The rise of the affordable popular press in the late 1900s provided 'an abundance' of a variety of content, giving rise to the notion of mass media and a mass audience (Örnebring and Jönsson, 2004). The arrival of radio made news provision faster and cultural expressions more readily available. In Europe, this radio abundance was quickly curbed by governments that, from the 1920s, installed public service monopolies because they considered radio a public good (Scannell, 1996). A foundational notion was universality: there was to be a controlled provision of content spreading relevant news, knowledge and entertainment to all citizens across the nation through programmes presented in a diverse schedule that provided each listener a wide range of perspectives (Van den Bulck, 2001, 2009). The public service monopoly and principles were extended to television when it was introduced widely in the 1950s. In Europe, therefore, television only came to be perceived as 'abundant' in the 1980s with the introduction of competition, which resulted in a boom in commercial television channels and broadcasting hours and in new types of content (e.g. Siune and Truetzschler, 1992). Most recently, digitisation and the web ignited a new wave of perceived abundance, as they provide an array of news, information and entertainment, networked connections, new ways of consumption and opportunities to become a consumer and producer of content (Karppinen, 2009; Meikle and Young, 2011).

At every stage, audiences and media have looked for ways to manage abundance through some form of personalisation: that is, adapting content, delivery and arrangement to individual users' preferences (Thurman and Schifferes, 2012: 2). Editors decide what to print in order to fulfil the publication's aim and to reach its audience. People choose between newspapers according to their tastes (e.g. elite vs popular) or to their political orientation (Örnebring and Jönsson, 2004). The public service monopoly, too, relied on editorial curation but, with few exceptions, originally eliminated audience choice. Soon, though, PSM launched channels that catered to different tastes and preferences.

On some level, every new channel erodes the universality principle by adjusting content to the preferences of specific user groups (Scannell and Cardiff, 1991). Further steps in that direction were quasi-pull services like teletext, video-on-demand and websites. However, these personalisation efforts were mostly organised at aggregate rather than individual levels and resulted from choices made top-down by the media rather than bottom-up by audiences (Cowling and Tambini, 2002; Paulussen and Ugille, 2008). All people could do was read or not read a paper, watch or not watch a programme, access or not access a website.

Recent technological and economic developments affect media personalisation more fundamentally. First, broadband technology, smart phones, smart television sets and tablet computers facilitate the use of truly on-demand services, including for audio–visual content (Doyle, 2010). Second, the technological capacity to make quick and rough analyses of complex information – referred to as 'Big Data' – dwarfs previous attempts at measuring audiences and equips media producers with new tools for personalisation that use algorithmic mechanisms to select and present content (Webster and Ksiazek, 2012).

This article explores the implications of this newest stage of personalisation for PSM. How do public service institutions deal with this trend and how do they legitimize their approach? How does personalisation affect core values, especially universality? First, these questions are contextualised in a theoretical framework that looks at the core of PSM and the potential impact of personalisation. Next, these theoretical positions are put to the empirical 'test' in two steps. First, we map a sample of European public service organisations' strategies vis-à-vis digital personalisation. Subsequently, we take an in-depth look at the Flemish and Norwegian PSM, the results of which allow for a nuanced discussion of how contemporary personalisation affects established PSM values.

PSM and universality

The notion of public service in relationship to media was developed in the early 20th century under a specific set of political, technological and social conditions. Perspectives on this relationship changed across time and space; yet throughout, there remained 'an overlapping consensus on certain core normative criteria' (Born and Prosser, 2001: 671). Born and Prosser (2001) categorised these criteria into three main principles, the latter two deriving from the first: (1) Enhancing, developing and serving social, political and cultural citizenship; (2) Universality; and (3) Quality of services and output.

We focus on the principle of universality. From the start, it was considered as a dual ideal (Van den Bulck, 2001). First, it refers to *universal appeal*. PSM must provide a range of programmes that inform, inspire, entertain and appeal to the diverse interests of the young and the old, the higher and less educated, across the community. The underlying ideal is that a well-functioning democracy rests on an informed citizenry, best achieved through the simultaneous dissemination of a shared message to all citizens (Born and Prosser, 2001). Furthermore, universal appeal is considered to contribute to the nation as an 'imagined community' with a shared cultural background and identity (Gripsrud, 2002). This underlies the generalist channels that PSM are known for: 'one-size fits all programming' (Jakubowicz, 2006: 13). This is realised through linear broadcasting and, in particular, scheduling: a careful selection and combination

of programmes that encourages people to watch/listen to a bit of everything, even programmes that appear uninteresting 'at first sight' (Van den Bulck, 2009).

Over time, this aspect of universality has been challenged by a proliferation of commercial thematic content to begin with, and more recently, by personalised, individual content (Moe, 2008). Some scholars consider these developments a threat to universal appeal (Born, 2004). Others propose a reinterpretation of the principle as a combination of universality of basic supply on generalist channels (PSM's core business) and universality 'across the full portfolio of services, some of them specialized or tailored for specific audiences, adding up to a more extended and comprehensive range of services' (Jakubowicz, 2006: 13). For these scholars, new media and new consumption practices do not undermine but complement the relevance of generalist provisions.

The latter interpretation of universality is not entirely alien to PSM, since it is related to the second tier of the original interpretation of universality: the idea that PSM must cater to every specific taste, even outside the mainstream. It implies attention to minority interests, including high culture and educational programmes. This resulted in the provision of various radio and television channels to accommodate all tastes. According to critics, this characteristic of PSM was undermined in the 1990s when a commercial-competitive rationale replaced the cultural-educational one, whereby minority tastes were no longer catered to (De Bens, 2001; Sparks, 2000). For some, personalised services can help to solve this problem by providing a 'personalised public service' (EBU, 2002; Nissen, 2006). These observations result in our interest in understanding how PSM engage with personalisation efforts. However, to fully grasp the relationship between personalisation and universality in a media landscape of plenty, we must understand contemporary personalisation mechanisms and their implications.

Personalisation and its pitfalls

Media users filter content by browsing a newspaper or switching to specific channels or programmes, selecting content that fits their interest: that is, they personalise available content. Digital services and online media allow for more efficient filtering through automation. Following Thurman and Schifferes (2012), we distinguish between explicit and implicit personalisation. Explicit personalisation involves a user making deliberate choices before receiving content, for example, asking news aggregator Google News to focus only on sports. Implicit personalisation is done by algorithms that process traces of previous choices to build a base for future personalisation, for example, through contextual recommendations, geo-tagging or filtering.

Scholars have received these personalisation options in different ways. Optimists like Negroponte (1996) and Castells (2010) emphasise the *media richness* and opportunities for diversity: Personalisation helps people to be better informed (and entertained). Negroponte famously refers to the *Daily Me*: a customised composition of filtered content that meets the needs of the individual media user. Still 'visionary' in 1996, this seems closer to realisation today: While linear television remains highly popular, digital alternatives, through on-demand and algorithm-based viewing suggestions, create opportunities for personalised television consumption that cuts through the clutter (Barkhuus and Brown, 2009).

Others express concern regarding the impact of personalisation on media's democratic role, especially in relationship to universality. With regard to news and information, two key contributions illustrate what is at stake. The first comes from Sunstein (2007), who points to the fragmentation of public debate. Sunstein (2007) considers Negroponte's *Daily Me* 'not nearly ambitious enough' (p. 4) in thinking about the role of media in democracy. For him, a well-functioning system of free expression has two key features. First, it exposes people to opinions and perspectives they would not choose on their own and, second, it provides citizens with 'a range of common experiences' (Sunstein, 2007: 5–6). Sunstein refers to evidence that groups of like-minded people generally end up with an extreme version of their view after discussing among themselves. This shows the continued need for a system that maintains the functions of 'general interest intermediaries' like newspapers and broadcasters with a universal scope that creates serendipitous media use, as users stumble upon content they would not seek out. Sunstein's work triggered empirical studies and further theoretical discussion (e.g. Benkler, 2006), and it has direct implications for how PSM consider personalisation and its potential for enhancing/eroding universality.

The second contribution is by Pariser (2011) and is considered an acute diagnosis of the state of information distribution and knowledge gathering in the digital era. He dates the start of 'the era of personalisation' to 4 December 2009, when Google introduced personalised search functions for all users. Pariser creates the metaphor of the 'filter bubble' to explain the consequence of technological options to explicitly and implicitly sort information according to individual preferences: They leave each of us in our own isolated sphere, as we lose the cross-referencing connections provided by mass media and the early web. Pariser (2011: 9ff) identifies three dynamics of filter bubbles. First, you are alone in it. In previous stages in media's target group optimization, bubbles where shared. Now, each individual creates a truly personalised environment. Second, the bubble is invisible. Earlier, we were aware of choices we made, for example, by switching to a specific channel or renting a film on VHS. Today, filtering is done for us, without our knowledge, by algorithms that are black boxes to the average user. Third, you cannot choose to enter the bubble. In the past, personalisation was an active process, that is, something you could opt out of. Now, it is a default and, for all practical purposes, there is no option to turn off the filtering. The completely personalised composition of information sources and wider cultural content has become a given.

Sunstein and Pariser focus mainly on news and information but the core of these ideas goes further. Just like news platforms use previous reading selections to provide you with similar content, Amazon shows you alternative books based on earlier buying behaviour and Netflix suggests films and series similar to what you watched before. In short, the filter bubble applies to all types of content. Just and Latzer (2016) forcefully express how these algorithms co-govern/co-determine what you (can) find on the web, what is expected, produced, highlighted and appreciated:

> The question arises of what impact the increasingly personalized nature of algorithmic reality construction has on [the] 'shared' social reality, especially regarding potential detrimental effects on democracy. (Just and Latzer, 2016: 9)

This concern returns our focus to personalisation and PSM's societal role. Commercial media have few (other than financial) limitations preventing them from investing in and profiting from personalisation tools and algorithmic fine-tuning. However, PSM must consider the pros and cons of personalisation against their remit, especially that of universality. We therefore ask the following questions: Do PSM see personalisation efforts as fitting in or clashing with their core values, including universality? Does personalisation give rise to new fundamental issues, for example, regarding privacy?

Research set-up

Mapping PSM personalisation policies

To understand how PSM organisations develop personalisation policies and how the public service context generates specific opportunities and challenges, we advanced in two steps. First, we collected data for a sample of PSM institutions. Our basic assumption is that different framework conditions are important to understand differences in institutional strategies.

To ensure sufficient potential diversity in type of institutions and contexts, we took a stratified sample based on two typologies. First, Hallin and Mancini's (2004) 'Three Models of Media and Politics', that is, the Liberal, Polarised-Pluralist and Democratic-Corporatist model, supplemented with a fourth, Post-Communist model (Jakubowicz, 2007). These models group countries with similar media systems and are based on relationships between media and politics, with an emphasis on journalistic news media. The second typology focuses specifically on PSM regimes (Moe and Syvertsen, 2009):

1. Systems with broad interventions and strong, well-funded PSM found in Northern Europe, including the Nordic region, the Netherlands, Germany, Belgium, the United Kingdom, and in Japan.
2. Systems with some intervention, usually to stimulate domestic programming, and a lower level of public funding, including France, Australia, Canada and South Africa.
3. Systems with minimalist intervention, low levels of public funding and marginal public service broadcasters, found in Southern European countries, including Greece, Italy and Spain, and in New Zealand and the United States.

While the models have been criticised (e.g. Humphreys, 2012 on Hallin and Mancini), they ground comparisons in line with our basic assumption and allow us to study if and how responses to personalisation differ according to PSM institution and to the contexts they operate in.

This resulted in the sampling of the public service media organisations ORF (Austria), VRT (Belgium), DR (Denmark), YLE (Finland), NPO (Netherlands), SVT (Sweden), and SRF (Switzerland) as representatives of strong PSM systems within a Democratic-Corporatist model; BBC (UK) as a strong PSM operating within the Liberal Model; FR-télé (France) as representative of a middle-ground PSM system in the Polarised-Pluralist model; and RAI (Italy) representing the Polarised-Pluralist model but with

weaker PSM traditions in our typology. Finally, PR/TVP (Poland) and RTVSLO (Slovenia) represent the Post-Communist model. The dominance in the sample of institutions from the North with strong PSM traditions is justified by earlier research showing that these institutions take the lead in digital developments (Van den Bulck, d'Haenens and Raats, 2018).

Data were retrieved through document analysis (internal organisational documents, media coverage), and surveys with academic experts and PSM professionals in charge of personalisation. After the authors' efforts at document retrieval and identification of professionals were exhausted, experts in the authors' networks were contacted with a survey, enquiring for (additional) documents, background information and relevant PSM contacts. The latter were contacted and presented with a survey. As a result, for each PSM institution, we had data from documents, one expert and, in most cases, one representative of the institution.

For each PSM, information from the three types of sources were triangulated to identify personalisation strategies. Subsequently, PSM strategies were compared to map the various institutions according to two axes. One axis represents views on the relationship between universality and personalisation through a continuum: from seeing universality function through personalisation to seeing personalisation as opposing universality. The other axis represents strategies of personalisation through a continuum: from a main focus on providing personalised services through linear and analogue means, dominated by user initiative (explicit personalisation), to personalisation through digital and algorithmic services (implicit personalisation).

Case studies: VRT and NRK

Subsequently, we analysed in detail how these dimensions play out in two cases that are part of the European 'heartland' of strong PSM: Flemish VRT and Norwegian NRK. Both have a long history, and their role in the respective societies has weathered various crises and pressures that remain relevant today (Moe, 2008; Van den Bulck, 2008; Van den Bulck and Moe, 2012; Van den Bulck and Donders, 2014a,b). The authors' expertise on and access to these institutions further determined the selection. The advantages of a case study approach are that it offers a spatial, temporal and substantial limitation that gives meaning to the research project insofar as the in-depth analysis of one case allows the researcher to understand very specific processes and functions through detailed de- and re-construction (Flyvbjerg, 2006). The cases are not considered representative of all PSM's personalisation policies, but the advantage of analysing two cases is that the resulting comparison allows us to understand the variety and breadth of the relevant issues. The findings thus allow for a better understanding not just of personalisation policies at VRT and NRK but of the wider phenomenon of personalisation. We opted for in-depth interviews to obtain insight into the personalisation discourses of policymakers. For the NRK, we interviewed Head of Media Development Heidrun Reisæter (20 June 2016) and Head of Personalisation Project at the Media Development Division Trond Johansen (20 June 2016). For VRT, we interviewed Head of Digital Production Stijn Lehaen (19 May 2016) and Head of Research and Innovation Dieter Boen (17 June 2016). Overall, the analysis does not aim to evaluate personalisation efforts against PSM
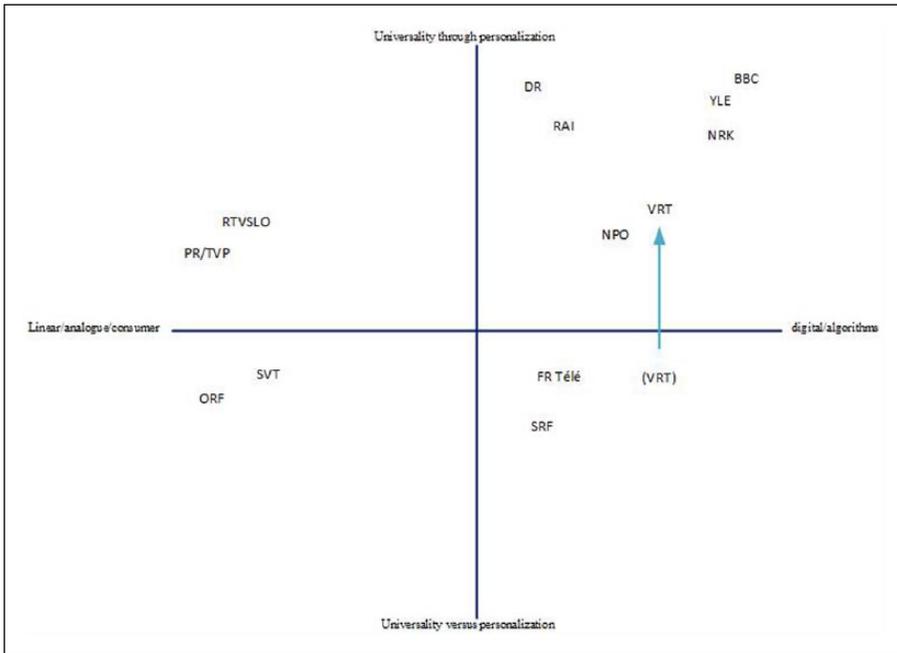
Figure 1. Mapping sample PSM on 'linear/analogue/consumer' – 'digital/algorithms personalisation efforts', and 'universality versus personalisation' – 'universality through personalisation' axes.

goals but to understand the institutions' interpretation of how personalisation and universality match.

European PSM running the personalisation gamut

As said, the first exercise was to plot the various institutions' policies on two axes.

Figure 1 shows that most PSM strategies in the sample have moved to a certain level of digital personalisation services based on algorithms, and several to a considerable and intense level. Starting from its prescribed role as a leader in innovation, BBC has the most advanced policy (and implementation) of algorithmic personalised services across genres. As early as 2004, BBC Research and Development (R&D) published a paper on personalised recommendation services (Ferne, 2004; see Sørensen, 2011) and has expanded on this ever since, currently focusing on so-called object-based broadcasting. The BBC Distribution Framework (BBC Trust, 2015) confirms the relevance of universality in terms of universal access but, at the same time, connects it to innovation and personalisation. For BBC policymakers, personalised services help BBC realize its goals, including universality. A similar approach can be found with YLE, which considers personalisation to be integrated in its strategy (e.g. YLE, 2016). As part of its 'platform neutral mission', YLE presents personalisation as an inroad to better ensure

universality, and has implemented algorithm-based services in a range of genres, including news. In that regard, its policy views are close to that of NRK (see below).

Danish DR is a little more apprehensive (cf. Sørensen, 2011). It embraces 'personalisation in order to deliver the most relevant public service experience for [the] audience' but aims to use personalisation technology 'not to deliver "more of the same" to the user, but to expand or broaden the user's consumption of DR's content' (Head of personalisation project, DR, Faarvang, email survey). Personalisation is considered a means to ensure universality: 'to bring Danes together/create common references, challenge them, and keep them informed […] in a digital context' (Faarvang, DR, email survey). Similar views are expressed (if not yet implemented) in the 2016–2020 policy documents of RAI, aimed at turning the institution into a digital company: 'by developing a distinctive and personalized digital offering in order to ensure a large audience and effective and universal access to RAI's services – "anyone/anywhere/anytime"' (RAI, 2016–2020 business report).

The Dutch NPO uses digital personalisation services but, similar to VRT, worries about potential infringements of universality (see below):

> At NPO we believe personalisation is an opportunity to cater to our audiences better, in a more personal way. But it is also a challenge, because it concerns the privacy of our users and because it might lock people up into filter bubbles. That is why we only personalise a service in a fully transparent way and after well-informed consent of the user. We want to keep including new surprising views, even when we personalize a service, from our public goal to deliver universal, broad, pluralistic services to our users. (Mezen Dannawi, senior strategy and policy advisor NPO, email survey)

Two PSM that venture into digital personalisation services but do not consider it a means to reach universality, are French FR-télé and the Swiss PSM. In the French case, this means providing new services next to traditional open-access universal services, as it is convinced that one cannot replace the other. The Swiss are even more reluctant (Puppis, academic expert, email survey).

Few of the sampled institutions stay away from digital and algorithm-based implementations. The Polish and Slovenian PSM interpret personalisation mainly in the sense that dominated the linear era, focusing on target group channels. As RTVSLO's Deputy Director explains, '[T]he services are expected to personalise/accommodate for the minorities (different handicaps, national minorities, linguistic personalisation)' (Natalija Gorscak, RTVSLO, email survey). Any desire to venture into more digital, algorithm-based approaches is thwarted by the wider political situation of the respective PSM, which face issues of increasing government control, censorship and extensive financial cutbacks (Glowacki, academic expert, email survey).

Austrian ORF and Swedish SVT's restraint in developing digital personalisation services is engrained in the notion of personalisation as going against universality. However, the policies have a different source. For SVT, this seems based in negative experiences and a concern for transparency. As a result, 'SVT is not likely to embrace full-scale personalisation. Rather, innovations that divulge such a move should primarily be thought of as a form of "image management"' (Schwarz, 2016: 136). ORF, however, was pushed into this policy by commercial stakeholders that convinced lawmakers that

personalisation is the reserve of newspapers. As Trappel (academic expert, email survey) explains, 'The most significant is the obligation to remove all online content seven days after publication; this prevents the ORF […] from personalising such services'.

The mapping of different institutions' strategies towards personalisation to some extent supports the assumption that similar media system characteristics and PSM regimes result in similar policies: The Eastern European institutions do so. We also find the French case, traditionally less well-funded than Northern European institutions, low on the axis of universality through personalisation. However, contrary to our assumption, many institutions with similar histories and comparable media system frameworks take up different positions in the figure. For instance, the Nordic SVT, YLE and DR all vary according to both axes, with the former appearing as an outlier in this group. On the other hand, RAI, a Southern European representative, appears alongside DR despite the assumption that it struggled under difficult framework conditions. Aiming to better understand the reasoning behind personalisation strategies, we provide a close analysis of the two cases.

VRT and NRK: histories and understandings of technology

Focusing on NRK and VRT, Figure 1 shows them at a similar point on the analogue–digital axis, but at quite different points on the universality–personalisation axis. The aim of our discussion based on the interview data is not only to substantiate this positioning but also to highlight the arguments behind the strategies.

At a basic level, the different positions of the institutions can be understood in light of different histories in the development of personalisation services and, more broadly, of new media services. However, developments are not linear, so time spent on development does not, by definition, result in a similar position on the universality–personalisation axis. We argue that the two cases display different understandings of technologies, which translate into different approaches and rationales for personalisation, and in ways to tackle challenges created by personalisation. To substantiate our argument, we first turn to the histories of personalisation services.

Histories of personalisation

VRT and NRK manifested very different processes preceding their personalisation initiatives, indicative of a respective reluctance versus eagerness to explore possibilities.

The NRK moved from scattered initiatives to a coherent strategy in a period of 10 years, through singular initiatives from the (previously 'New Media', now) 'Media Development' division. In 2014, NRK's Media Development division was restructured and online media were strengthened. NRK hired a new Head of Media Development. One of her tasks was to bring together the fragmented initiatives and, based on previous experiences in the commercial sector, to carve out a coherent strategy for personalisation to be 'anchored' with NRK's top management (Reisæter, interview). From then on, personalisation at NRK was treated as a formal part of the remit. The Media Development division subsequently designed a personalisation project that gained the approval of NRK's top management.

Compared to NRK, VRT came late to the game, following considerable reluctance that was mostly within VRT management, but also reflective of views (and distrust) among politicians and Flemish society in general (Boen, interview). The unwillingness was based in arguments that relate to PSM's credibility. First, for a long time, universality was positioned against personalisation:

> PSM are in the business of making content relevant to its users (not to advertisers) and of having an impact on and being a service to society. In other words, PSM content always aims for a certain effect. For a long time, personalisation was seen as having the opposite aim. (Lehaen, interview)

Second, and contrary to NRK's early rationale, VRT policymakers originally felt PSM should avoid and counter anything that generates information about audiences through personal data for commercial gain (Boen, interview). The third argument focused on trust as the sole selling point of a public media institution, which VRT management thought would be undermined by personalisation.

When compared, the two cases differ somewhat in the ways personalisation developments took place: The NRK created a comprehensive approach early on, which was approved by top management, while the VRT displayed a more hesitant history up until 2016. This is in line with previous research's description of how these institutes operate in the digital age (Moe, 2008).

Arguments for personalisation

Looking at the arguments underpinning the strategies of VRT today, we find a continuation in the overall concern, but a clear/steady shift in perspective. First, universality is no longer positioned against personalisation at VRT. Our informants identify a change beginning in late 2015, following a growing realisation that personalisation can improve rather than weaken universality by ensuring that users spend time on media (content) that is relevant to them (Lehaen, interview; Boen, interview).

Second, VRT no longer shuns data collection. Indeed, by 2016, VRT management had changed tack and considered personalisation and customised services as opportunities for the institution to create a better service and a 'different route', distinct from commercial initiatives: 'As platforms such as Facebook become news providers, the role of PSM becomes even more important', according to Lehaen (interview). Moreover, as people become more 'media savvy' and acknowledge what commercial companies do with their data, they expect PSM 'to do the right thing', and 'to provide an alternative' (Lehaen, interview). And finally, the issue of trust is reframed as a given that allows VRT to move forward as the 'best' partner for media users with respect to personalisation (Boen, interview).

NRK's 'scenario' for personalisation provides three main arguments that partly overlap with and partly differ from VRT arguments. The first, discussed below, is an insistence on the need to combine algorithmic recommendations with editorial teams. Second, NRK sees personalisation as 'hygiene', that is, as taken for granted. Audiences expect the web to recognise us: Browsers remember passwords and search engines guess what

people are looking for. So, by 2014, NRK saw personalisation not as new and potentially scary but as a prerequisite for the web to work in the way we have come to expect (Reisæter, interview).

The third argument for personalisation starts from the relationship between technical possibilities and the wealth of content PSM produce. NRK considers personalisation as 'the new form of scheduling. It is public service broadcasting 2.0 because through recommendation technology we can create links for people they would not get otherwise' (Reisæter, interview). They see this as more relevant to PSM than to commercial media, as it provides opportunities to 'utilize the breadth of our content, making it more relevant and being more accurate when presenting "narrow" content towards each user' (Johansen, interview). In essence, they argue for creating serendipity for users.

Comparing the ways in which these possibilities of personalisation are addressed by the two institutions, NRK displays a more optimistic view, taking the bull by the horns by framing personalisation's key challenges to universality as a positive opportunity rather than a threat for PSM. VRT, while developing a similar strategy in practice, presents more reserved arguments, giving more room to inherent problems as regards personalisation.

So far, we have considered histories and arguments behind personalisation strategies. We now turn to three specific aspects of personalisation that highlight the dilemmas of PSM and the differences between VRT and NRK: issues of recommendation systems, log-ins and privacy.

Recommendation systems

On the issue of recommendation systems, NRK informants stressed the need to combine algorithmic recommendations with editorial teams:

> The machines will not take over; we can still use our brains, partly doing editorial desking and partly providing automated recommendations. We have spent quite some time […] reassuring people that they will not become a stupid, commercially driven filter bubble, but will rather be able to say 'now you have watched only fun stuff, have you considered something interesting in documentaries?' (Reisæter, interview)

The latter indicates that the NRK informants are aware of discussions about 'filter bubbles'. The brushing aside of such concerns, however, is interesting, and quite forceful:

> The problem could be if one comes to us and only watches WWII documentaries, only that, and we have a perfect personalisation rig which serves the user only that content type – we're not going to do that even if we have the technical opportunity. We're not going to because it is not our remit. (Johansen, interview)

On this question, the VRT appears considerably more careful. Recommendation is considered a sensitive point 'because you create a filter and encourage binge viewing

while public service values involve encouraging people to view different genres' (Boen, interview). While seemingly incompatible, VRT is convinced it can create a smart mix of recommendations and competing content, but emphasises that

> [i]t is up to the institution to create that mix. PSM cannot simply work with algorithms that can be bought in the general, commercial market […] VRT departments need to create their own that take into account the remit, the need to provide the mix of push and pull, and that allow serendipity of content to coexist with personalisation. (Boen, interview)

Boen is confident that, while adding curation (i.e. conditions to recommendations) to algorithms is complicated, it is not impossible and that 'much can be learned from other areas, such as banking, where curating is a standard functionality' (Boen, interview). Control, steering and a good understanding are considered essential.

For VRT, limitations and opportunities vary according to, first and foremost, genre/ type of content and, to a lesser extent, target group. The main concern (Lehaen, interview; Boen, interview) is that media users consume more than just the content they are interested in: 'We would never offer a fully personalised service because there will always be content which we as a PSM institution feel you should get' (Lehaen, interview). This is seen to apply, first and foremost, to news, where PSM will want to distribute certain information to everybody, whether they (think) they are interested in it or not: 'The top news stories will always be decided by the newsroom, not the user' (Boen, interview). So, while NRK is aware but not concerned about the risk of filter bubbles, VRT shows considerably more caution for key news areas. For 'less centrally relevant topics' such as regional news, the Flemish institution believes personalisation can help to ensure a personalised service. Interestingly, music, too, is considered unsuitable for personalisation, as VRT feels obliged to acquaint people with genres they would not select if left to personalised platforms. Similarly, the video player developed as part of the 2016–2020 management contract wants to move beyond a Netflix-style recommendation ('you watched this so you might be interested in that') to include 'this is what you should discover/explore' (Lehaen, interview).

On the issue of recommendation systems, then, the overall aim does not differ much between the two cases, but the arguments and the attention to concerns for universality are quite distinct, with VRT being more reserved when it comes to core PSM principles.

Log-in services

Log-in services constitute a second core aspect. Identifying what they mean by personalisation, NRK informants distinguish between Thurman and Schiffers (2012) explicit and implicit personalisation, pointing to the latter as having the biggest potential. The NRK aims for one shared log-in function across all digital offerings, including online radio and television players, Apple TV, apps and websites. 'Our ambition is to know people so well that we can give them good recommendations and guide them through what we have. […] In order to do [personalisation] well, we need you to relate to us as an ecosystem' (Reisæter, interview). This is an ambitious understanding of personalisation, similar to the thinking of global brands like Google, but creating dilemmas for PSM.

While NRK saw installing a log-in option as an 'obvious' move, 2016 saw VRT still waffling over that decision. PSM online video players tend to offer both options (log-in or not), in the eyes of VRT because the public institution cannot 'force' people to log-in. However, in practice, people are either obliged to log-in (e.g. in apps) or do so on their own initiative because it leads to more and better functioning (Boen, interview). For instance, thanks to services like Netflix, people have come to expect that when you stop watching an episode of a series, the machine will remember where you were when you return – as long as you log-in. This reflects the hygiene argument expressed by NRK. VRT departments are starting to follow suit.

The question of what to do with users who do not want to log-in is not lost on the NRK. As a publicly funded institution, the NRK can never 'force functionality on anyone […] We have to be just as good for you whether you want to log-in or not. If you choose to remain, like, anonymous, then we will still provide a good offer' (Reisæter, interview).

So, while the potential problems of operating two parallel services lead to hesitation and concern for VRT, NRK handles them as just something that must be dealt with. Similar to VRT, NRK informants point to the distinction between PSM and commercial initiatives that can afford to hide popular content behind log-ins to encourage users to sign up. The result, according to NRK, is parallel work required by a public institution, since both non-logged-in and logged-in users must be catered to.

Privacy and security

Third, we analyse how personalisation can give rise to new issues for PSM. As Just and Latzer (2016) point out, the rise of big data has led to concerns regarding 'data protection, privacy, data ownership, access to information, and surveillance' (p. 10). VRT and NRK recognise this and, in particular, see users' privacy as a new, key concern for PSM. They take similar measures but these are based in different views on complexity and urgency, with VRT again showing more concern than NRK.

NRK informants believe privacy concerns are more straightforward for PSM than for commercial media. Since sharing user data for commercial purposes is out of the question, NRK does not have to consider future commercial exploitation of user data when constructing privacy policies and terms of use (Reisæter, interview). Nevertheless, the NRK had to ensure that none of the approximately 40 third-party actors involved in digital service provisions (e.g. Google analytics) have access to NRK user data: 'We are not going to make it easy for third parties to use information on NRK users for commercial purposes' (Reisæter, interview). Again, the NRK demonstrates a pragmatic approach: Systematic work can tackle challenges and the bottom line is that the institution is well-positioned.

Like NRK, VRT feels it needs to do 'better' than other (commercial) platforms by treading more carefully, tying in privacy issues with the trust that is at the heart of its relationship with users. The institution can build on that trust to ensure user privacy will be adequately protected in personalisation endeavours; yet, if VRT does not do this properly, it can damage that trust-based relationship. VRT considers this as a real threat because people are becoming more aware of privacy issues: 'this does not stop them from engaging with platforms that potentially threaten that privacy but they are more

critical, they want to know what is being done with their data and what they get in return' (Boen, interview). More than NRK, Boen (interview) connects privacy explicitly to security. He claims this has pushed VRT to become involved with various partners to develop a shared system for secure digital data gathering and protection.

The specific issue of privacy and data protection brings out the nuances between the two institutions' approaches, with the VRT being less optimistic and more cautious.

Case discussion

The comparison of VRT and NRK, two PSM institutions representative of strong positions operating in similar media systems, adds to our understanding of the differences in the various approaches to personalisation. The histories of the development of personalisation services matter and go some way to explain the differences visible in the institutions by 2016. Yet, focusing on current arguments and on specific dilemmas facing PSM when developing personalisation services, we find another dimension that relates to understandings of technology.

Analysis of their evolving policies showed the ways in which PSM institutions try to align personalisation with a reinterpretation of universality. Not only do VRT and NRK represent two different versions of a similar position on the axes used in the general mapping, they also seem to take up two sides of a third axis that positions PSM personalisation efforts on a 'views on technology' continuum: from technological optimistic to technological apprehensive. NRK clearly takes the optimist position, maintaining that algorithmic and other digital personalisation options strengthen core PSM values like universality. In a sense, universality is reinterpreted to fit personalisation. Potential problems such as filter bubbles and privacy issues are recognised but considered as minor hurdles along the way. This seems based in technological determinism, reflective of a view on PSM and digitisation also expressed by them in other policy issues (Van den Bulck and Donders, 2014a, b). In this regard, NRK is representative of a number of other PSM, most notably BBC, YLE and RAI. VRT, by contrast, is situated towards the other, technological apprehensive end of the continuum. It accepts the potential of and invests in digital forms of personalisation to better fulfil its remit, but considers issues such as filter bubbles and privacy as key obstacles to maintaining universality. Therefore, personalisation is reinterpreted to fit universality rather than the other way around as in the case of NRK. This position reflects a social constructivist (rather than technological determinist) take on technology, considering personalisation tools only to the extent that they can improve (rather than guide) its main public service objectives and audience needs. Some other PSM in our initial mapping, that is, DR, NPO, FR-télé and even more so, SVT, also seem close to the social constructivist end of this continuum.

Conclusion

This article analysed how media personalisation challenges the core PSM value of universality. Emphasising the long history of personalisation but highlighting how current algorithm-based approaches entail a radical change, we wanted to understand the policies and strategies that public service institutions in different contexts have

developed so far to face these challenges. Analysis of the sampled PSM shows great variation in strategies, by and large following general differences between media systems, but also displaying some unexpected scattering of cases that we assumed would cluster together. We mapped the institutions along two axes, one representing a continuum from 'old style' linear/analogue personalisation to new digital/algorithmic personalisation and the other presenting the relationship between universality and personalisation, from universality-through-personalisation to personalisation-as-threat-to-universality. This showed that a majority of PSM are moving in the direction of digital and algorithmic personalisation, which they see as a tool to realise universality in new ways. Just a small minority considered personalisation as little more than a 'marketing' tool. Most of those not yet involved in implicit personalisation were forced by political circumstances to forego it. In short, personalisation is increasingly becoming part and parcel of the (planned) policies of PSM.

Our interest lay in understanding why institutions operating in similar framework conditions differ in policies regarding personalisation. This led us to zoom in on two cases: public radio stations in Flanders and Norway. This more in-depth analysis showed that, in addition to paying close attention to histories of new media developments, we need to take into account differences in understandings of technology and how they colour the ways in which personalisation is related to principles of universality.

Regardless of the various positions of individual PSM, it appears that under pressure from personalisation options, policymakers are looking at new ways to realise universality, both in its understanding as *universal appeal* and as *beyond the mainstream*. In the past decade, researchers (cf. Jakubowicz, 2006; Van den Bulck, 2008) identified three complementary tools to realise universality that, in the vocabulary of this contribution, translate into (1) linear services for wide audience, (2) linear services for specific audiences and (3) explicit (user-determined) personalised public services. It appears that PSM are increasingly including another option: (4) implicit (algorithm-determined) personalised public services. To ensure that this fourth option fits universality and wider goals and responsibilities of PSM, there is a need for a 'public service' algorithm that goes beyond the narrowing down of choice to personal preferences to ensure serendipity, that is, to ensure that personalised services invite users to go beyond their personal interests and to expose themselves to alternative views and interests.

Funding

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