Cultural policies, social missions, algorithms and discretion: What should public service institutions recommend?

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Abstract. Digital media services, and streaming services in particular, filter and recommend content to their users by the use of algorithms. In this paper, we ask what happens when institutions like public service broadcasters, public libraries, as well as other media institutions who base their operations on public funding and social mission statements, implement similar algorithms. Can we think of alternate algorithmic principles? What should public service algorithms recommend, who would decide, and based on what criteria? In order to address questions such as these, we argue for a broad approach based on not only technological considerations, but also complementing perspectives touching upon how such institutions are situated in the media industries, relevant cultural policy frameworks and practices for handling quality assessments. Using examples from Scandinavian public service and media institutions, we indicate how the coding of algorithms have profound social and cultural implications. This short paper thus initiates a project with the aim of examining various algorithmic perspectives that could - and perhaps should - be taken into account when approaching issues of cultural policies, social missions and discretion in publicly funded culture institutions.

Keywords: Social Missions, Public Service, Recommender Systems.

1   Introduction

Can you code a social mission?

In a study of the availability of media content in streaming services, Tallerås, Colbjørnsen and Øfsti [1] found that Netflix tend to recommend their own "originals". In a newspaper article [2] following up on the study, a representative from Netflix commented the findings by stating that their recommendation system simply was favorizing movies and TV series matching previous preferences of their users; if they watch Netflix originals, they will be exposed to more of those. This is a legitimate way of targeting an audience in the commercial streaming market, but what happens when institutions like public service broadcasters and public libraries, based upon public funding and operating principles, implement similar algorithms? What should they recommend, who would decide, and based on what criteria?

These are grand questions forming a complex problem area. In order to approach them, we need an appropriate technological perspective, but also complementing perspectives touching upon how such institutions are situated in the media industry, relevant cultural policy frameworks and not least practices for handling quality assessments. There exist a variety of previous research relating to this problem area, including papers that thoroughly outline and describe the area as an important one to research [3]. Most related studies, however, are focused on limited perspectives, for example on certain branches of public service institutions or on how the technology in itself can be designed and developed to provide better recommendations. Such studies provide important contributions, but in order to respond satisfactorily to the questions outlined above, it is imperative to bring together a series of perspectives, including political, social and cultural aspects.

This short paper initiates a project which aims at doing that. The objective at this stage is not to answer the grand questions directly, but to examine various perspectives that could – and perhaps should – be taken into account when approaching issues of cultural policies, social missions and discretion in publicly funded culture institutions.

In the remainder of the paper, we present perspectives from the fields of information science, media studies and cultural sociology. The presentations exemplify the problem area by drawing on practical cases from a broad conception of what we may term Scandinavian public service institutions. These include public service broadcasters, public libraries, but also commercial media organizations in the book industry. Our discussions reference streaming services as specifically interesting sites of algorithmic considerations. At the end, we provide some concluding remarks.

2   Streaming, Recommender Systems and Public Service

In Norway, as in other Scandinavian countries, streaming services have become increasingly popular over the last few years. Like most digital media services, streaming services rely on algorithms for search, recommendation, personalization and presentation. Indeed, streaming services with databases containing hundreds of thousands or even millions of titles can be said to rely even more heavily on algorithmic filtering. Spotify, Netflix and YouTube are the most common examples of such algorithm-driven streaming services. Other examples include streaming services for ebooks and audio books, such as Storytel and Kindle Unlimited. Besides these international companies, national and regional actors, some commercial, some funded by taxpayers' money, also run streaming services. Some form of algorithmic filtering is typically part of these as well. Even public libraries apply the streaming model, one example being US public libraries that subscribe to the Kanopy service for providing access for patrons to films.

The government-owned Norwegian broadcasting corporation (NRK), has increasingly made their media content freely available online and in the recent years, offered access through a streaming platform. In 2017, the "sandbox" department for tech-testing at NRK, NRKbeta, published two blog post [4-5] presenting a recommender system that had been implemented on this platform. The postings addressed a challenge of skewed consumption: A few titles from their considerable collection of available media

content, account for most of the usage. To meet the challenge, NRK set out to bring forward titles from the long tail of content and that would match the relevant context of the user [4]. The technique described by NRKbeta combines and utilizes two similarity measures; similarities that can be found between media objects, e.g. based on metadata describing genres and responsibilities, and similarities that can be identified between users based on their behavior and feedback patterns. These techniques resemble the most common way of classifying recommender systems as so-called content filtering, collaborative filtering, or through the combination of these in hybrid systems. Recommender systems, and the tweaking of such techniques are part of a long tradition of research in information and computer science [6], where the overall research problem is to design systems that provide useful and effective suggestions, e.g. in order to sell more products or to increase user satisfaction in streaming systems.

Although the NRKbeta postings do not mention or relate directly to a concrete mission statement providing a premise for their developments, the identification and formulation of their problems suggest that their main ambition is to increase the diversity of usage, or at least to provide an alternative method for dissemination that does not reinforce the popularity of already popular objects. The diversity problem represents a vital branch of research on recommender systems, often referring to diversity of sales, or a strategic problem of balancing diversity with the need to provide accurate recommendation. More recently, "exposure diversity" has been discussed as a design principle in its own right, e.g. based upon a general concern for a "decrease in the diversity of information to which users are exposed" [7]. Others have questioned the use of recommender systems for discretion in public service institutions as such, given the challenge to implement the systems without risking mimicking "data-driven approaches [that] operate within commercial frameworks" [8].

With a mission to serve the public, rather than commercial interests or the state, public service broadcasters differ from commercial services like those found in the book industry (which is discussed in the next section). Public service broadcasters have a long history of balancing broad and narrow content in their programming, and it is in line with their historical mission that they seek to remain a common cultural arena in a society that is moving towards individualized culture consumption.

In Norway, NRK has since it faced competition from commercial actors in the national TV-market in the 1990s, based a significant part of its legitimacy on being the largest actor in the Norwegian TV market. Being popular among the citizens, measured in viewing numbers as well as trust surveys, has served as the basis for the organization's legitimacy. That is, as the most popular and most trusted actor in the market, they were not in need of active legitimation work on the part of the broadcasting organization [9].

As a public service broadcaster, the NRK is obliged to work towards fulfilling some cultural policy goals set by the Ministry of Culture. Operating at arm's length from the Ministry, NRK nevertheless exert editorial freedom and autonomy in its content programming. However, the Ministry and citizens will not be content simply with being provided with popular content. Basing its legitimacy on being popular, must go hand in hand with the provision to the citizens of programs that are considered important due to their artistic quality or their importance for society. When algorithms decide which

content to recommend to the individual consumer, this leave the data programmers with a significant amount of power in managing the public service mission. Are they aware of this, and how does it manifest itself in their work?

Public service broadcasters have throughout their history been an important arena were citizens can take part in a common (national) culture, and acquire a shared set of cultural references etc. In today's individualized digital culture, these arenas are dismantling. How are the public service broadcasters relating to this part of their history, in developing streaming services? Is it at all possible to maintain a common arena based on algorithmic logics?

3   Streaming Services for Digital Books and their Social Contracts

While public service broadcasters are clearly bound to some form of social mission, it is arguably less evident that commercial streaming services need to take other considerations than related to their core business. Nonetheless, book industry actors in countries with strong cultural policy measures (such as the Scandinavian countries) often proclaim that they adhere to a social or cultural mandate, a public service remit that separates them from purely commercial actors. Conversely, cultural policy makers expect more than merely monetary considerations from such actors. This implicit social contract may, we argue, have consequences for how algorithmic filtering is done.

Algorithms make certain types of content more easily available than other types. The question, which applies to commercial as well as public organizations, remains: What types? Since companies like Storytel (International), Fabel (Norwegian), Mofibo (Denmark), Bookbeat (Sweden) and Nextory (Sweden) are commercial entities, independent from government control, we may expect them to apply algorithmic filters in any way they see fit. That could mean promoting only bestsellers or titles associated with the company (all the services are in some way affiliated with a publisher). On the other hand, these companies (some more than others) enjoy public support, directly through subsidies or indirectly through policy measures that promote the production and dissemination of culture. In Norway, such measures include tax exemption, fixed prices, artist support, public libraries and government-funded purchasing programmes for libraries.

We ask what kinds of algorithmic filtering can be expected from commercial services with significant public support, departing from the Norwegian situation and with specific reference to streaming services Storytel and Fabel. Norwegian cultural policy provides support for book industry actors, and specific measures on pricing and inventory applies to booksellers. As booksellers, Storytel and Fabel are required to provide all available titles upon request, as per a 2017 addendum to the Norwegian Book Agreement. Nonetheless, the selection of titles in both services is contingent on ownership by publishers Cappelen Damm (Storytel) and Lydbokforlaget (Fabel) [1]. Thus, the algorithms are already incapable of promoting "anything, anywhere, anytime", as the streaming hyperbole claims.

Then, as the algorithms of Storytel and Fabel are put to work, the programmed actions that they take may further limit cultural choice and thwart practices that go beyond the mainstream and the predictable. The fear of filter bubbles is a well-known concern [10]. A different variation of the algorithmic unease stems from the impression that taste patterns can grow increasingly narrow, as recommendation algorithms seek to avoid deviations from the preferences already indicated [11]. Finally, it is important to note that the user interfaces ("shop fronts") of streaming services are very restricted in terms of how many items can be shown simultaneously. It follows that concentration on the few items displayed can be a concern, even considering the personalization efforts made. In a recent study, we looked at recommendations in Storytel, based on the "Personal book recommendations" category. We found that the 15 most frequently recommended titles were part of 45 per cent of all recommendations in this category. Only three of these 15 titles, were published by other publishers than Cappelen Damm, Storytel's parent company [1].

In digital platforms, curation and recommendation, traditionally the task of culture industry gatekeepers, is delegated to algorithms whose work is typically hidden or made difficult to monitor. While it is far from politically uncontroversial, it can be argued that even private and commercial organizations need to code social missions into the algorithms they operate.

4   Recommendations, Discretion and Questions of Cultural Quality

The basic assumption of this paper is that recommendation services, both digital and analogue, address the questions of quality, discretion and values. The most obvious is perhaps, that by recommending, displaying, or highlighting some media objects others are made less visible, less valued and less used. From this follows that changes in the infrastructure of recommendation practices have an impact on cultural values, qualities, how discretion is performed etc.

For Norwegian public libraries, key concepts guiding their dissemination practice, directly expressed in the Public Library Act of Norway, are actuality, quality and versatility [12]. According to Tygstrup [13] the logic behind the algorithms, now used in recommender systems, is not a simple trial-and-error structures, but based on a type of feedback: "the intuitive handling of a book, a film, or a playlist is recorded as feedback, which can be included in the production of improved versions" [13, p. 94]. One question is thus, to which extent do recommender technology based on user behavior, interaction and other types of feedback displace the balance between these concepts and their related, but different values.

When NRKbeta motivates their implementation of recommender systems [4], they highlight the importance of a broader use of their collections, but also express that the core of their concept of quality is relevance. The new systems have a capacity that the staff do not have, to make the media objects more used. More use becomes a symptom of relevance: "The numbers speak for themselves. Those who are exposed to the rec-

ommendations are clicking more. […] Our interpretation of this result is that the systems enable us to present more exciting content. The programs that we recommend are more relevant." [4, our translation]. The success criteria, relevance, slides in their interpretation towards personal aesthetic preference: *exciting content.*

The data NRKbeta puts forward also shows that the time user spent watching the recommended program also increased. This also fit the narrative of success: "clicks are not enough. We want people to watch the TV shows they click on" [4]. If we accept that discretion and valuation is a complex interaction between context, work (œuvres) and users, it is reasonable to question the consequences of only focusing on user preference as a recommendation criterion. This narrative is, of course, more complex. If a motivation for implementing a recommender system "was to display and expose users to a greater diversity of the catalogue", another one following from this is expressed as that "people would discover content they didn't know they wanted to see" [4]. Taken at face value this statement is interesting. Firstly, because the phrasing is very similar to what we find in another public institution with a clear mandate to recommend or disseminate cultural items. In e.g. a public library context, it has been worded like this: "The libraries must be a place where people not only get what they want, but also get opportunities to discover what they didn't know about beforehand" [14, p. 55]. In this context, one connotation of facilitating the opportunities of discovery is Bildung; i.e. the reader or film watcher's possibility for growth and development in interaction with their environments [15-16]. In this argument, growth and development are concepts relying upon an open future, that the logic of feedback technology doesn't necessarily provide [13]. Secondly, following the first: The question that lurks under this twofold strategy are how to balance serendipity (to value the unplanned) with more direct patterns of user preference? Do they stimulate our social habits of discovering or do they stimulate repetitive habits or behavior? This is an even more interesting question, since the values / qualities, we often ascribe to art and culture is exactly to stimulate the possibility to discover, to be challenged and even to be transformed.

5   Concluding Remarks

Associated with public institutions with long historical roots is often the impression that they are not keeping up with technological development [14, 15]. In NRK's own strategies, it is stated directly that "NRK must be present, and develop services on, all major media platforms […]." The ambition may imply that NRK continuously obtain and implement technology developed under other conditions than public service, for example for commercial purposes. As we have touched upon, mimicking the algorithm design of Netflix and Amazon is an example of such isomorphism between public and private actors. Public funded organizations are guided by their commitments to society as a whole and their individual members with their needs and preferences [16]. The use of new and emergent technology is not a problem, if the technology fit NRK's social mission to address the public as citizens and not consumers. Here, we have mostly been concerned with raising this issue. Future work will have to address the specific questions of how to fit algorithms and social missions of PSB.

As our paper has pointed out, PSB`s are not the only institutions where these concerns are raised. Public libraries are bound by similar commitments. Even commercial book industry actors and others who benefit from public support and funding may have their algorithms scrutinized by concerned citizens, scholars and policy makers.

Developing algorithms for recommendation, presentation, personalization etc. is not typically the work of traditional curators, although the function that algorithms perform is (partly) curatorial. There is a concern that the principles of algorithmic design (similarity, relevance) are not necessarily in harmony with cultural values (diversity, quality, Bildung). Thus, it takes a conscious interdisciplinary effort to develop public service algorithms.

According to Nielsen and Langsted [16-17], in the domain of cultural policies, this implies that quality should not equal individual taste or preference. The question one should ask, is "whether the given cultural/artistic activity is experienced as appealing, inspiring and challenging by the contemporary public and to what degree it contributes to the development of cultural life and the cultural public debate" [18, p. 242].

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