Articles

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Online Behavioural Advertising, Consumer Empowerment and Fair Competition: Are the DSA Transparency Obligations the Right Answer?

I. Introduction

Advertising used to revolve around reach and frequency: how many people saw the ad and how often? It would thus be profitable to be able to show an ad for example in the break of a very popular TV series. In this case, all people watching the series would be exposed to the same ad.[1] Today, however, advertisers have more possibilities than reach and frequency to target their audiences: they can seek personalization by targeting customers with advertisements tailored to those customers' interests. By targeting consumers, brands do not seek a maximum reach, but focus on a smaller subset of consumers who are more likely to be a good match with the advertiser's products. Depending on the level of accuracy, this is supposed to increase the firm's profit[2] and save money on irrelevant advertising. The personalization of ads is based upon the collection of data. Think about socio-demographic data (e. g., age, gender, location, education) and online behavioural data (e. g., clicked ads, likes, website visits, search history, online purchases).[3] Advertising based on the latter is called online behavioural advertising (OBA). OBA is one of the most important ways of reaching targeted audiences in the digital society. It is supposed to tailor the ads in a way they become more personally relevant for consumers.[4]

Despite its seeming advantages for both businesses and consumers, OBA raises several regulatory concerns, including its potential to create the so-called personalized information or filter 'bubbles'.[5] In these bubbles, consumers predominantly encounter products and services aligned with their prior preferences, potentially limiting their exposure to new options and hiding the full spectrum of offers available in the marketplace. Consequently, consumers might overlook a wider range of purchase choices and only be aware of a limited set of sellers, even in competitive markets.

The objective of this paper is to investigate the normative implications and potential risks of this phenomenon, assess the effectiveness of transparency obligations as a potential regulatory countermeasure and, finally, explore alternative avenues that may complement transparency-based interventions. In order to achieve this aim, the paper first explains the technical aspects of OBA and how these technical features contribute, potentially, to the formation of filter bubbles (2). It then examines three primary issues arising from OBA-induced information bubbles: first, the reduction of consumer choice, empowerment, and autonomy (3.1); second, the implications for unfair competition law (3.2); and, third, the effects on more general policy considerations, such as the establishment of well-functioning markets (supply and demand), and European borderless internal market goals (3.3). After identifying challenges arising from OBA, the paper explores potential solutions. Drawing on the findings of a collaborative study with communication science specialists, it first focuses on the potential of enhanced transparency obligations, recently codified at EU level in the Digital Services Act (DSA),[6] to 'burst' the filter bubble by encouraging consumers to actively explore alternative products on the market (4.1). Second, it investigates whether additional interventions, such as active 'information enrichment' by platforms and OBA service providers, may be necessary (4.2). The paper concludes with closing remarks (5).

II. Online Behavioural Advertising (OBA): Technical Features and the Filter Bubble Phenomenon

Understanding the technical features of OBA is essential for assessing the normative implications of this widespread advertising practice. First of all, the question arises how an OBA is matched with the right consumer. This is mostly done through real-time-bidding, a form of programmatic advertis-

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1 Theo Araujo et al., 'From Purchasing Exposure to Fostering Engagement: Brand-Consumer Experiences in the Emerging Computational Advertising Landscape' (2020) 49(4) *Journal of Advertising*, <https://doi.org/10.1080/00913367.2020.1795756> accessed 29 March 2025.

2 Jiwoong Shin and Jungju Yu, 'Targeted advertising and consumer inference' (2021) 40(5) *Marketing Science* 900, 914.

3 Id., 900; Nadine Bol et al., 'Vulnerability in a tracked society: Combining tracking and survey data to understand who gets targeted with what content' (2020) 22(11) *New Media & Society* 1997.

4 Sophie C Boerman, Sanne Kruikemeier and Frederik J Zuiderveen Borgesius, 'Online Behavioral Advertising: A Literature Review and Research Agenda' (2017) 46(3) *Journal of Advertising* 363, 364.

5 Eli Pariser, *The filter bubble: What the Internet is hiding from you* (London, England; New York, New York: Penguin Books 2012); Frederik J. Zuiderveen Borgesius et al., 'Should we worry about filter bubbles?' (2016) 5(1) *Internet Policy Review*, <https://doi.org/10.14763/2016.1.401> accessed 29 March 2025; Amy Ross Arguedas et al., *Echo Chambers, Filter Bubbles, and Polarization: A Literature Review* (Reuters Institute for the Study of Journalism, 2022), <https://reutersinstitute.politics.ox. ac.uk/echo-chambers-filter-bubbles-and-polarisation-literature-review> accessed 29 March 2025.

6 Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market For Digital Services, PE/30/2022/REV/1, OJ L 277, 27.10.2022, p. 1.

ing.[7] This means that an algorithm instead of a human matches the ad with the individual.[8] Real-time-bidding is an algorithmic system where advertising spaces (e. g., the ad banners you see on platforms, such as Facebook), are sold to the highest bidder through an automated auction process.[9] It is called 'real time', because the moment someone visits the website, the auction starts and the ad space gets sold.[10] Real-time-bidding is a complex process, with various parties involved: a visitor, supply-side platform, advertising exchange (AdX) demand-side platform and data management platform.[11]

The process gets triggered when someone (the visitor) clicks on a webpage. That webpage (the publisher) has various ad spaces. Those are in principle just blank banners, which are sold to the highest bidder of the auction (the advertiser). Both the supply-side platform and demand-side platform are fully technical and automatic intermediaries. The former represent the publishers and the latter the advertisers. The AdX can be seen as the auction house.[12] What is actually being sold is called the 'bid request'. The bid request contains data of the visitor. Vaele and Zuiderveen Borgesius list as examples *inter alia*: the website visited, device, operating system, who the user is, year of birth, gender, interests, geography, postal code and more.[13]

Since the bids are being placed automatically, the determination of the ad value can be a bit opaque and depends on various factors. Roughly speaking, the valuation is typically based on the prediction of the visitor's likelihood to purchase the advertiser's product and the value of that purchase.[14] To calculate this, a lot of data about the visitor is needed, in order to determine whether it is worth making a bid and how high that bid should be. If for example a visitor's browsing history shows earlier interest in the advertiser's brand, the advertiser would like to place a higher bid.[15] It is important to make an accurate calculation to both improve the user experience, but also to increase the firm's profit.[16] That is where the data management platforms come in. Demand-side platforms can send the bid request to the data management platforms, who enrich the request with even more data about the visitor by using different data sources. Google is an example of a company that also runs data management platforms.[17]

To target accurately it is important to have sufficient amounts of data. How that data are collected can vary. To track consumer's browsing behaviour, companies often use cookies.[18] A cookie is a small piece of text that is stored in a user's web browser the first time the user visits the website. That way, every time the user visits the website the browser sends the cookie to the server to identify the user.[19] As a result an online shop can remember what a user had in their basket for example.[20] As long as those cookies are from the website itself, they are called first-party cookies. However, when you are visiting a website, not all elements are owned by that website. Some elements, such as ad spaces, are owned by third parties. It is therefore possible that those parties also place cookies on the website. This is called a third-party cookie.[21] Thus when you think you are only visiting one webpage, you are actually querying other servers that can track you as well.[22]

The tracking of users often happens covertly.[23] This practice involves a lot of personal data, which users are often not aware of.[24] Because of the privacy concerns associated with the deployment of third party cookies, their use is increasingly getting reduced.[25] Therefore, first party data is starting to play a more important role in advertising.

Throughout the year 2022, we conducted a comprehensive study on consumer reactions to OBA. Based on desk research and semi-structured stakeholder interviews, our study measured consumers' perceptions of parameter transparency in algorithmic advertising, in an online consumer panel involving almost two thousand participants.[26] From the interviews we held, it appeared that 'lookalike' audiences have emerged as an important ad targeting tool. With this method, brands can upload their customer list (hashed – i. e., converted into an unreadable format to protect privacy) to platforms like Facebook. Facebook then uses its own data to search for similar customers. As an advertiser you can specify to which extent you want the new audience to resemble your own customer list. For example, you want 100 % lookalikes, then you get a narrow new audience, but it is also possible to opt for a smaller matching percentage, only 20 % for instance.[27]

Privacy is not the only concern surrounding these ad practices. The proliferation of OBA raises questions regarding its impact on the information flow reaching consumers. Nota-

7 Michael Vaele and Frederik J Zuiderveen Borgesius, 'Adtech and Real-Time Bidding under European Data Protection Law' (2022) 23 *German Law Journal* 226, 231.
8 Id.
9 Id., 227.
10 Jun Wang, Weinan Zhang and Shuai Yuan, *Display Advertising with Real-Time Bidding (RTB) and Behavioural Targeting* (Now Publishers Inc., 2017), 4, <https://doi.org/10.48550/arXiv.1610.03013> accessed 29 March 2025.
11 Michael Vaele and Frederik J. Zuiderveen Borgesius, 'Adtech and Real-Time Bidding under European Data Protection Law' (2022) 23 *German Law Journal* 226, 231, 232.
12 Id., 231, footnote 32: it is not as simple as there being various publishers represented by one supply-side platform seeking an advertising represented by one demand-side platform, all on the same Adx. In reality publishers use multiple supply-side platforms, starting auctions on different AdXs simultaneously. Therefore, the supply-side platforms can choose from different bids.
13 Michael Vaele and Frederik J Zuiderveen Borgesius, 'Adtech and Real-Time Bidding under European Data Protection Law' (2022) 23 *German Law Journal* 226, 232.
14 Jun Wang, Weinan Zhang and Shuai Yuan, *Display Advertising with Real-Time Bidding (RTB) and Behavioural Targeting* (Now Publishers Inc., 2017), 16 and 17.
15 Id., 10.
16 Id., 27.
17 Michael Vaele and Frederik J Zuiderveen Borgesius, 'Adtech and Real-Time Bidding under European Data Protection Law' (2022) 23 *German Law Journal* 226, 232.
18 Sophie C. Boerman, Sanne Kruikemeier and Frederik J Zuiderveen Borgesius, 'Online Behavioral Advertising: A Literature Review and Research Agenda' (2017) 46(3) *Journal of Advertising* 363, 364.
19 Jun Wang, Weinan Zhang and Shuai Yuan, *Display Advertising with Real-Time Bidding (RTB) and Behavioural Targeting* (Now Publishers Inc., 2017), 11.
20 Michael Vaele and Frederik J Zuiderveen Borgesius, 'Adtech and Real-Time Bidding under European Data Protection Law' (2022) 23 *German Law Journal* 226, 227.
21 Id., 228.
22 Id.
23 Sophie C. Boerman, Sanne Kruikemeier and Frederik J Zuiderveen Borgesius, 'Online Behavioral Advertising: A Literature Review and Research Agenda' (2017) 46(3) *Journal of Advertising* 363, 364.
24 Id., 363.
25 Bram Duivenvoorde, 'Datagedreven marketing en de toekomst van het consumentenrecht: tijd voor een nieuwe beschermingsgedachte?' (2022) 4 *TvC* 193.
26 See further Edith G Smit et al., 'Towards Transparency in Algorithmic Advertising' (forthcoming 2025).
27 K. Sudhir, Seung Yoon Lee and Subroto Roy, 'Lookalike Targeting on Others' Journeys: Brand Versus Performance Marketing' (2022) *Cowles Foundation Discussion Paper No. 2302*, <https://ssrn.com/abstract=3927976> or <http://dx. doi.org/10.2139/ssrn.3927976> accessed 29 March 2025.

bly, as mentioned already, personalised advertising practices are said to be susceptible of creating personalised information or filter bubbles,[28] or targeting pockets,[29] wherein consumers are primarily exposed to products and services aligned with their prior preferences, possibly limited to products and services they have previously shown interest in.

Whereas, so far, content governance circles have much attention to the phenomenon of information or filter bubbles in the context of news recommender systems and political discussion on the Internet[30] (with a growing body of research suggesting, though, that these bubbles may not empirically exist in the broader information space[31]), the effects of information bubbles in the context of OBA remain a concern. Because of their enclosure potential, OBA filter bubbles may restrict an individual's awareness of a wider array of available purchase options. This, in turn, can have serious implications for consumer choice, autonomy, empowerment, fair competition, and the general well-functioning of markets, as discussed in more detail below. As Laux et al. show, '[c]onstellations are possible in which a market is generally open to competition, but the targeted consumer is only made aware of one possible seller'.[32] This phenomenon is further exacerbated not only by the fact that consumers are getting increasingly tailored advertisements but also by the relatively small number of market players acting as driving forces behind this personalization.[33]

In the course of our study, we tested, among others, whether transparency information on the parameters of OBA encourages consumers to leave their algorithmic 'bubbles' and actively seek additional information on alternative offers. The data we gathered confirmed, however, the risk of consumers staying in their information bubbles.[34] This was primarily due to consumers' tendency to be somewhat passive and simply accept OBA-generated choices, as they are often unwilling to proactively search for alternative offers beyond those suggested to them through personalized ads.

It is thus essential to study more closely the normative implications of personalized advertising practices, including the potential risks they create associated with information bubbles.[35]

III. The Effects of OBA Filter Bubbles

As mentioned already, OBA-induced filter bubbles can prove problematic in three principal ways: from the perspective of reduction of consumer choice, consumer autonomy and empowerment (3.1), from the standpoint of unfair competition law (3.2), and from more general policy considerations, such as the public interest in well-functioning markets (supply and demand), and the European borderless internal market goals (3.3).

1. The Effects on Consumer Choice, Consumer Autonomy, and Empowerment

Market information fragmentation created by filter bubbles can negatively impact, first and foremost, consumer autonomy and free choices.[36] Consumer protection, meanwhile, forms one of the cornerstones of the EU single market commitment. Article 12 of the Treaty on the Functioning of the European Union (TFEU), for example, states explicitly that '[c]onsumer protection requirements shall be taken into account in defining and implementing […] Union policies and activities'.[37] In addition, Article 38 of the EU Charter of Fundamental Rights sets the requirement of a 'high level of consumer protection' in Union policies.

Consumers' personal autonomy is eroded when technology interferes with individual choices by either 'over-confirming' past preferences or actively shaping them. Rather than broadening the spectrum of market-related information – i. e., increasing the range and availability of information that consumers can access about products, services, and options in

28 Eli Pariser, *The filter bubble: What the Internet is hiding from you* (London, England; New York, New York: Penguin Books 2012); Frederik J. Zuiderveen Borgesius et al., 'Should we worry about filter bubbles?' (2016) 5(1) *Internet Policy Review*, <https://doi.org/10.14763/2016.1.401> accessed 29 March 2025; Amy Ross Arguedas et al., *Echo Chambers, Filter Bubbles, and Polarization: A Literature Review* (Reuters Institute for the Study of Journalism, 2022), <https://reutersinstitute.politics.ox. ac.uk/echo-chambers-filter-bubbles-and-polarisation-literature-review> accessed 29 March 2025.

29 Johann Laux et al., 'The Concentration-after-Personalisation Index (CAPI): Governing Effects of Personalisation Using the Example of Targeted Online Advertising' (2022) 9(2) *Big data & society* 1.

30 See e. g. Eli Pariser, *The filter bubble: What the Internet is hiding from you* (London, England; New York, New York: Penguin Books,2012); Lisa Harris and Paul Harrigan, 'Social Media in Politics: The Ultimate Voter Engagement Tool or Simply an Echo Chamber?' (2015) 14(3) *Journal of Political Marketing* 251; Engin Bozdag and Jeroen van den Hoven, 'Breaking the Filter Bubble: Democracy and Design' (2015) 17 (4) *Ethics and information technology* 249; Seth Flaxman, Sharad Goel and Justin M. Rao, 'Filter Bubbles, Echo Chambers, and Online News Consumption' (2016) 80(1) *Public Opinion Quarterly* 298; Dominic Spohr, 'Fake News and Ideological Polarization: Filter Bubbles and Selective Exposure on Social Media' (2017) 34(3) *Business Information Review* 150; Mario Haim, Andreas Graefe and Hans-Bernd Brosius, 'Burst of the Filter Bubble?: Effects of Personalization on the Diversity of Google News' (2018) 6(3) *Digital journalism* 330; Jaron Harambam, Natali Helberger and Joris van Hoboken, 'Democratizing algorithmic news recommenders: how to materialize voice in a technologically saturated media ecosystem' (2018) 376(2133) *Philosophical Transactions Royal Society A* 1; Stefania Milan and Claudio Agosti, 'Personalisation Algorithms and Elections: Breaking Free of the Filter Bubble' (2019) *Internet Policy Review*, <https://policyreview.info/articles/news/personalisation-algorithms-and-elections-breaking-free-filter-bubble/1385> accessed 29 March 2025; Ana S Cardenal et al., 'Echo-chambers in online news consumption: evidence from survey and navigation data in Spain' (2019) 34(4) *European Journal of Communication* 360; Ana S Cardenal, et al., 'Digital Technologies and Selective Exposure: How Choice and Filter Bubbles Shape News Media Exposure' (2019) 24(4) *The International Journal of Press/Politics* 465; Gregory Eady et al., 'How Many People Live in Political Bubbles on Social Media? Evidence From Linked Survey and Twitter Data' (2019) *SAGE Open* 1; Efrat Nechushtai and Seth C Lewis, 'What Kind of News Gatekeepers Do We Want Machines to Be? Filter Bubbles, Fragmentation, and the Normative Dimensions of Algorithmic Recommendations' (2019) 90 *Computers in human behavior* 298; Justina Januškevičiūtė, 'Threats to the Process of Receiving Political News from Echo Chambers and Filter Bubbles on Social Media' (2022) 94 *Information & Media* 39; Samuel C. Rhodes, 'Filter Bubbles, Echo Chambers, and Fake News: How Social Media Conditions Individuals to Be Less Critical of Political Misinformation' (2022) 39(1) *Political Communication* 1.

31 Frederik J Zuiderveen Borgesius et al., 'Should we worry about filter bubbles?' (2016) 5(1) *Internet Policy Review*, <https://doi.org/10.14763/2016.1.401> accessed 29 March 2025; Judith Möller, 'Filter bubbles and digital echo chambers' in Howard Tumber and Silvio Waisbord (eds), *The routledge companion to media disinformation and populism* (Routledge 2021), p. 92.

32 Johann Laux et al., 'The Concentration-after-Personalisation Index (CAPI): Governing Effects of Personalisation Using the Example of Targeted Online Advertising' (2022) 9(2) *Big data & society* 1, 2.

33 Johann Laux, Sandra Wachter and Brent Mittelstadt, 'Neutralising online behavioural advertising: Algorithmic targeting with market power as an unfair commercial practice' (2021) 58(3) *Common Market Law Review* 719, 735.

34 Edith G Smit et al., 'Towards Transparency in Algorithmic Advertising' (forthcoming 2025).

35 Johann Laux et al., 'The Concentration-after-Personalisation Index (CAPI): Governing Effects of Personalisation Using the Example of Targeted Online Advertising' (2022) 9(2) *Big data & society* 1, 4.

36 Natali Helberger et al., 'Macro and Exogenous Factors in Computational Advertising: Key Issues and New Research Directions' (2020) 49 (4) *Journal of Advertising* 377, 382.

37 See also Articles 4(2)(f), 114 and 169 of the Treaty on the Functioning of the European Union (TFEU).

the market – technology can limit consumers' exposure to alternatives and constrain their ability to form independent preferences.[38] Helberger et al. point out how algorithms can decrease consumer power by 'reducing choice and awareness of competing products and services that are not being recommended'.[39] Along the same lines, Sevastianova observes that basing purchasing predictions on past experiences can generate 'a lock-in effect' wherein consumers are bound by products they bought earlier, 'with limited opportunities for second-order desires, or "preferences over preferences", which are key elements of autonomy'.[40] Laux, Wachter and Mittelstadt additionally illustrate how the distribution of market influence within ad tech allows OBA to limit consumers to a smaller range of behaviourally chosen options, leading to adverse effects on informed consumer decision-making.[41] When a few dominant ad intermediaries rely on algorithmically inferred consumer profiles, non-profile-based options in the market diminish in visibility and the consumers' choice shrinks.[42]

Admittedly, a certain degree of information personalisation can be beneficial to consumers. Personalized advertising may initially seem to enhance personal relevance by tailoring content and trade offers to individuals' previous choices and interests.[43] Given the vast number of goods and services available online, no consumer has the time or cognitive capacity to assess all possible options.[44] Some level of personalization is therefore crucial for consumer empowerment – helping individuals to efficiently identify suitable products and services within their limited time.[45]

However, when personalized advertising becomes overly restrictive and causes filter bubbles, it can undermine consumer autonomy rather than supporting it. Algorithms that present content exclusively based on past behaviour may reinforce existing preferences, limit exposure to a wider range of options, and hinder independent decision-making. In this sense, personalization serves the interests of businesses rather than consumers. As Helberger et al. note, '[t]he increased focus on individual consumers, and their growing influence on the algorithmic advertising process […] does not automatically translate to enhanced agency, as many of these processes operate on the basis of inferred data, and users are able to control data flow only to a limited extent'.[46] Similarly, Onitiu highlights that consumers simply 'might not be aware of the extent of the filtering process, which influences their agency and choice.'[47] Thus, while personalization can facilitate individual decision-making, its primary objective remains the maximization of online business profits rather than the empowerment of consumers.[48]

The effects of information bubbles on consumer empowerment and autonomy have, among others, significant implications for online users' enjoyment of their fundamental rights, particularly their right to private life as protected by Article 8 of the European Convention on Human Rights (ECHR)[49] and Article 7 of the EU Charter of Fundamental Rights.[50] Importantly, however, the impact of information bubbles associated with OBA extends beyond the 'privacy' dimension of these provisions that is often discussed in relation to online targeted advertising. The European Court of Human Rights (ECtHR) has consistently emphasized that the term 'private life' as defined in Article 8 of the Convention is a comprehensive concept. It encompasses various aspects, including the right to personal autonomy and personal development.[51] In the context of personalized advertising and filter bubbles, this notion of personal autonomy becomes particularly significant. When a consumer is trapped in a filter bubble, her ability to exercise personal autonomy in the sense of Article 8 is compromised. Consumers may no longer be able to make choices and decisions about their own life, free from external manipulation or undue influence. Filter bubbles may thus subtly erode personal autonomy by narrowing the scope of decisions one can make, potentially influencing an individual's purchasing decisions and even broader perspectives.

In additional to the personal autonomy aspect of Article 8 ECHR, OBA-induced information bubbles and the market fragmentation information they create can also present challenges from the perspective of the right to freedom of expression protected by Article 10 ECHR and Article 11 of the EU Charter. Crucially, the right to freedom of expression safeguards not only the freedom to express oneself but also the freedoms to impart and receive information. Furthermore, it is well established that it extends to the commercial context, including various advertising practices.[52] In the context of

38 Eliza Mik, 'The Erosion of Autonomy in Online Consumer Transactions' (2016) 8(1) *Law, innovation and technology* 1, 2.

39 Natali Helberger et al., 'Macro and Exogenous Factors in Computational Advertising: Key Issues and New Research Directions' (2020) 49 (4) *Journal of Advertising* 377, 380.

40 Vera N Sevastianova, 'Trademarks in the Age of Automated Commerce: Consumer Choice and Autonomy' (2023) 54(10) *IIC* 1561, 1568. The issue might become even more complicated because, as Sevastianova observes, 'when consumers' shopping behaviour is "predicted" by machines (more correctly "pre-empted"), people are not even given a chance to start a process of deliberation in their minds, and thus fail to exercise their autonomy.' Id.

41 Johann Laux, Sandra Wachter and Brent Mittelstadt, 'Neutralising online behavioural advertising: Algorithmic targeting with market power as an unfair commercial practice' (2021) 58(3) *Common Market Law Review* 719, 735.

42 Id., 737.

43 See e. g. Natali Helberger et al., 'Macro and Exogenous Factors in Computational Advertising: Key Issues and New Research Directions' (2020) 49(4) *Journal of Advertising* 377, 380; Johann Laux et al., 'The Concentration-after-Personalisation Index (CAPI): Governing Effects of Personalisation Using the Example of Targeted Online Advertising' (2022) 9(2) *Big data & society* 1, 4, 5; Natali Helberger et al., 'Choice Architectures in the Digital Economy: Towards a New Understanding of Digital Vulnerability' (2022) 45 *Journal of Consumer Policy* 175, 176; Florian Saurwein and Charlotte Spencer-Smith, 'Automated Trouble: The Role of Algorithmic Selection in Harms on Social Media Platforms' (2021) 9(4) *Media and Communication* 222, 224; Natali Helberger, Kari Karppinen and Lucia D'Acunto, 'Exposure diversity as a design principle for recommender systems' (2018) 21(2) *Information, Communication & Society* 191, 192.

44 Eliza Mik, 'The Erosion of Autonomy in Online Consumer Transactions' (2016) 8(1) *Law, Innovation and Technology* 1, 19-20.

45 Id.

46 Natali Helberger et al., 'Macro and Exogenous Factors in Computational Advertising: Key Issues and New Research Directions' (2020) 49 (4) *Journal of Advertising* 377, 380.

47 Daria Onitiu, 'Fashion, Filter Bubbles and Echo Chambers: Questions of Privacy, Identity, and Governance' (2022) 14(2) *Law, innovation and technology* 395, 403.

48 Eliza Mik, 'The Erosion of Autonomy in Online Consumer Transactions' (2016) 8(1) *Law, Innovation and Technology* 1, 20.

49 European Convention for the Protection of Human Rights and Fundamental Freedoms, as amended by Protocols 11, 14 and 15, and 7 other protocols (4 November 1950, ETS 5).

50 Charter of Fundamental Rights of the European Union (26 October 2012, 2012/C 326/02).

51 See, among many other authorities, *Pretty v The United Kingdom* App no 2346/02 (ECHR, 29 April 2002, para. 61, CE:ECHR:2002:0429JUD000234602); *A, B and C v Ireland* [GC] App no 25579/05 (ECHR, 16 December 2010, CE:ECHR:2010:1216JUD002557905), para. 212. See also Registry of the European Court of Human Rights, *Guide on Article 8 of the European Convention on Human Rights – Right to respect for private and family life, home and correspondence* (Council of Europe/European Court of Human Rights, updated on 31 August 2022), <https://www.echr.coe.int/documents/d/echr/guide_art_8_eng> accessed 29 March 2025, paras. 252-53.

52 See e. g. *Sekmadienis Ltd. v Lithuania* App no 69317/14 (ECHR, 30 January 2018, CE:ECHR:2018:0130JUD006931714); *Markt Intern Verlag GmbH and Klaus Beermann v Federal Republic of Germany* App no. 10572/83 (ECHR, 20 November 1989, CE:ECHR:1989:1120JUD001057283); *Dor v Romania* (dec.) App no 55153/12 (ECHR, 25 August 2015, CE:ECHR:2015:0825DEC005515312).

OBA, freedom of information translates into the consumers' freedom to receive a wide range of alternative offers and the traders' and other relevant actors' (such as advertising platforms) corresponding obligation to deliver those offers impartially. Filter bubbles, hence, due to their inherent potential to limit such information flows, pose a significant concern for the preservation of freedom of information in the online sphere. Prioritizing certain information while making other information less accessible cuts information flows to consumers reducing the likelihood that they will discover alternative options.[53] Although the 'concealed' information, such as products, services, or vendors, remains accessible, it may be challenging to locate unless the consumer is already aware of what they are seeking.[54] This can practically hinder the consumer from receiving relevant information on the most cost-effective solution or the product that aligns best with their preferences.[55] In this line, the recent study by Schnadower Mustri, Adjerid and Acquisti demonstrated, for example, that targeted ads often tend to be linked with vendors of lower quality and elevated prices for similar products in contrast to competing options discoverable in organic search results.[56]

Interestingly, the argument that information bubbles interfere with freedom of commercial expression brings us back to consumer autonomy considerations, as personal autonomy constitutes, indeed, a primary justification for the protection of commercial expression, with the emphasis on the rights of the listener or receiver of information rather than of the speaker.[57] In the EU, Advocate General Fennelly, for example, has held that 'individuals' freedom to promote commercial activities derives not only from their right to engage in economic activities and the general commitment, in the Community context, to a market economy based upon undistorted, free competition, but also from their inherent entitlement as human beings freely to express and receive views on *any* topic, including the merits of the goods or services which they market or purchase.'[58] Such an entitlement, according to the Advocate General, is based on 'the autonomy, dignity and personal development of individuals.'[59] On the other side of the Atlantic, the Supreme Court of Canada likewise relied on personal autonomy as a justification for commercial speech protection when stating that, 'over and above its intrinsic value as expression, commercial expression which […] protects listeners as well as speakers plays a significant role in enabling individuals to make informed economic choices, an important aspect of individual self-fulfilment and personal autonomy.'[60]

2. The Effects on Fair Competition

The reduction of consumer choice and autonomy, along with corresponding fundamental rights considerations, is not the sole concern regarding OBA-produced filter bubbles. From the perspective of fair competition, as recognized directly in the Preamble to the TFEU, filter bubbles that significantly distort consumers' ability to make informed choices by narrowing their exposure to a limited range of products or services, can also prove problematic. More specifically, such bubbles could be deemed unfair under both the general unfair competition clause in Article 5 of the EU Unfair Commercial Practices Directive (UCPD)[61] and the more specific provisions in Article 6 ('misleading actions') and Article 8 ('aggressive commercial practices').

With regards to 'misleading actions' under Article 6 UCPD, Laux, Wachter, and Mittelstadt observe, for instance, that, when advertising intermediaries lower the visibility of non-personalized alternatives, there is a higher probability that certain consumers will make transactional choices they would not otherwise make, resulting in a distortion of their economic decision-making in violation of Article 6 UCPD.[62] Laux, Wachter, and Mittelstadt reference in this context the European Commission's decision in *Google Shopping*, which recognised the harmful effects on competition of diminishing the prominence of rival comparison-shopping services.[63]

Additionally, when OBA is coupled with market dominance, it can potentially be viewed as an aggressive commercial practice under Article 8 of the UCPD, notably through the concept of 'undue influence' as defined in Article 9 of the UCPD.[64] As Helberger demonstrates, it might at times be difficult to draw a line between 'legitimate, albeit technologi-

53 Eliza Mik, 'The Erosion of Autonomy in Online Consumer Transactions' (2016) 8(1) *Law, Innovation and Technology* 1, 21.
54 Id.
55 Id.
56 Eduardo Schnadower Mustri, Idris Adjerid and Alessandro Acquisti, 'Behavioral Advertising and Consumer Welfare: An Empirical Investigation' (2023) <https://ssrn.com/abstract=4398428> or <http://dx.doi.org/10.2139/ssrn.4398428> accessed 29 March 2025.
57 Indeed, in the realm of commercial speech, it is a longstanding tradition to prioritize the protection of the interests of information recipients as a primary rationale for granting legal safeguards. As stated famously by the US Supreme Court, 'the extension of First Amendment protection to commercial speech is justified principally by the value to consumers of the information such speech provides.' (US Supreme Court, *Zauderer v. Office of Disciplinary Counsel*, 471 U.S. 626, 651 (28 May 1985) (citing US Supreme Court, *Virginia State Board of Pharmacy v. Virginia Citizens Consumer Council, Inc.*, 425 U.S. 748 (24 May 1976)). In relation to Article 10 ECHR, analogously, it was observed that, 'more often than not, the protection [for commercial speech] is discussed [by the ECtHR] from the consumer's perspective, not the speaker's.' (Bruce EH Johnson and Kyu Ho Youm, 'Commercial Speech and Free Expression: The United States and Europe Compared' (2009) 2 *Journal of International Media & Entertainment Law* 159, 196). The ECtHR stresses, for example, the positive effects of commercial expression and its core, advertising, on the information position of consumers when it holds that '[f]or the citizen, advertising is a means of discovering the characteristics of services and goods offered to him.' (*Casado Coca v Spain*, App no 15450/89 (ECHR, 24 February 1994, CE:ECHR:1994:0224JUD001545089), para. 51). In the US, analogously, the Supreme Court ruled that '[a]dvertising, however tasteless and excessive it sometimes may seem, is nonetheless dissemination of information as to who is producing and selling what product, for what reason, and at what price. So long as we preserve a predominantly free enterprise economy, the allocation of our resources in large measure will be made through numerous private economic decisions. It is a matter of public interest that those decisions, in the aggregate, be intelligent and well-informed. To this end, the free flow of commercial information is indispensable […].' (US Supreme Court, *Virginia State Board of Pharmacy*, id., 765).
58 Case C-376/98 and C-74/99, Opinion of AG Fennelly in *Germany v Parliament and Council* and *Imperial Tobacco and Others*, 15 June 2000, EU:C:2000:324, para. 154 (emphasis in original).
59 Id.
60 Supreme Court of Canada, *Ford v. Quebec (A.G.)* [1988] 2 SCR 712, 767.
61 Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market ('Unfair Commercial Practices Directive'), OJ L 149, 11.6.2005, p. 22.
62 Johann Laux, Sandra Wachter and Brent Mittelstadt, 'Neutralising online behavioural advertising: Algorithmic targeting with market power as an unfair commercial practice' (2021) 58(3) *Common Market Law Review* 719, 744-45.
63 Id.
64 See in this sense Natali Helberger, 'Profiling and targeting consumers in the internet of things' in Reiner Schulze and Dirk Staudenmayer (eds) *Digital Revolution* (Nomos 2016), p. 135, 157; Johann Laux, Sandra Wachter and Brent Mittelstadt, 'Neutralising online behavioural advertising: Algorithmic targeting with market power as an unfair commercial practice' (2021) 58(3) *Common Market Law Review* 719, 746; Philipp Hacker, 'Manipulation by Algorithms. Exploring the Triangle of Unfair Commercial Practice, Data Protection, and Privacy Law' (2021) *European Law Journal* 1, 9-10.

cally sophisticated persuasion and the exercise of undue influence' in terms of Article 9 UCPD in the behavioural advertising context.[65] Due to the asymmetry in the commercial relationship between digital advertisers and online consumers, where advertising platforms possess detailed knowledge of consumer behaviours while consumers remain unaware of the entities behind targeted advertising, traders are in a position to exercise 'undue influence' over consumers by significantly restricting their choices to a limited selection of predetermined products.[66]

On a more general level, the importance of alternative marketing information reaching consumers was specifically recognised by the Court of Justice of the European Union (CJEU) in a trademark context, in its judgment in *Interflora/Marks & Spencer*.[67] The Court went as far as establishing a due cause defence for the purpose of informing consumers about alternative offers in the marketplace.[68] From this judgment, it can be derived that information bubbles are problematic when they reduce the spectrum of offers that is brought to the attention of consumers. The judgment also emphasizes the importance of preserving consumers' freedom of choice and the necessity of providing them with a sufficiently broad spectrum of offers in the marketplace.

3. The Effects on the General Well-Functioning of the Market

Finally, it can be said that the effects of OBA-induced filter bubbles extend beyond individual autonomy and competition law, resonating deeply with broader policy considerations surrounding well-functioning markets and the European borderless internal market. These policy considerations include balanced trade mentioned explicitly in the Preamble to the Treaty on the Functioning of the European Union and 'the need to promote trade between Member States and third countries' proclaimed in Article 32 TFEU.

By restricting users' exposure to a limited set of information and products, filter bubbles can impact demand for certain products and services, causing disruptions in the market and affecting the delicate balance between supply and demand. This can further impede the introduction of new products and services, hindering innovation and contributing to market stagnation.

Furthermore, there is also the risk of echo chambers – a phenomenon exposing individuals to personalized advertising that continuously reinforces and amplifies their existing preferences without introducing new ones.[69] From the perspective of the European borderless internal market, this could result in consumers primarily receiving offers from their local community, such as their home country or region, rather than from other Member States. This potential localization effect of OBA may, in some cases, undermine the cross-border success of offers from other Member States, potentially impeding the free flow of goods and services across borders and hindering the European Union's aspirations for a truly interconnected and borderless internal market.[70]

Finally, there might be additional obstacles for smaller businesses in terms of market entry. For new businesses attempting to enter a market, filter bubbles can pose a significant barrier as algorithms may prioritize established players, making it challenging for newcomers to gain visibility and compete effectively.[71] Such a reduction of chances of competitors to reach consumers and compete for products and services can, in turn, prove problematic from the perspective of the freedom to conduct a business recognized in Article 16 of the EU Charter[72] and the prohibition of discrimination in Article 14 ECHR and Article 21 of the EU Charter.

IV. Bursting the Bubble: Exploring Possible Solutions

Given the issues identified above, it prompts us to consider the tools that could be provided to tackle these challenges. In what follows, we examine whether regulatory measures – enhanced transparency obligations – could help to 'burst' the filter bubble and bring more alternatives on the online market to the attention of consumers, thereby empowering consumers and creating a more level playing field for traders (4.1). We then explore the question of whether, in addition to transparency, some alternative solutions may be necessary, such as active 'information enrichment' by platforms and OBA services providers (4.2).

1. Enhanced Transparency

In literature, the proposal was advanced that more transparency can offer a solution to the above-identified problems linked to consumer autonomy and fair competition by making consumers more aware of the information bubbles they are in and by stimulating them, as a result, to actively search for alternative products on the market. Helberger et al., for instance, highlighted the need for transparency to empower

65 Natali Helberger, 'Profiling and targeting consumers in the internet of things', in Reiner Schulze and Dirk Staudenmayer (eds) *Digital Revolution* (Nomos 2016), p. 135, 157.

66 Federico Galli, 'Online Behavioural Advertising and Unfair Manipulation Between the GDPR and the UCPD' in Martin Ebers and Marta Cantero Gamito (eds), *Algorithmic Governance and Governance of Algorithms: Legal and Ethical Challenges* (Cham: Springer International Publishing 2020), p. 109, 124.

67 Case C-323/09 *Interflora/Marks & Spencer*, 22 September 2011, ECLI:EU:C:2011:604, para. 91.

68 Id. Further on this, see Martin Senftleben, 'Trademark Law, AI-Driven Behavioural Advertising and the Digital Services Act – Towards Source and Parameter Transparency for Consumers, Brand Owners and Competitors' in Ryan Abbott (ed.), *Research Handbook on Intellectual Property and Artificial Intelligence* (Cheltenham: Edward Elgar 2022), p. 309.

69 Judith Möller, 'Filter bubbles and digital echo chambers' in Howard Tumber and Silvio Waisbord (eds), *The routledge companion to media disinformation and populism* (Routledge 2021), p. 92; C. Thi Nguyen, 'Echo Chambers and Epistemic Bubbles' (2020) 17(2) *Episteme* 141; Seth Flaxman, Sharad Goel and Justin M Rao, 'Filter bubbles, echo chambers, and online news consumption' (2016) 80(1) *Public Opinion Quarterly* 298.

70 See, for example, the CJEU stating in a different context that Member States' tax policies should not reinforce existing consumer habits in a way that entrenches advantages for domestic industries (Case C-170/78, *Commission v United Kingdom*, 27 February 1980, ECLI:EU:C:1983:202, para. 14). However, it is also worth considering whether, from an environmental or sustainability perspective, limiting options within a certain region might be a legitimate policy choice. In light of growing concerns over carbon footprints and sustainable consumption, both consumers and policymakers may find value in promoting more localized economic interactions, balancing the benefits of cross-border commerce with environmental objectives.

71 More generally on the behavioural advertising practices affecting SMEs in their capacity as ad purchasers, see Niklas Fourberg et al., *Online advertising: the impact of targeted advertising on advertisers, market access and consumer choice* (Publication for the committee on the Internal Market and Consumer Protection, Policy Department for Economic, Scientific and Quality of Life Policies, European Parliament, Luxembourg, 2021), 38-41.

72 Further on the scope of the freedom to conduct a business under the EU Charter, see Xavier Groussot, Gunnar Thor Pétursson and Justin Pierce, 'Weak Right, Strong Court – The Freedom to Conduct Business and the EU Charter of Fundamental Rights' in Sionaidh Douglas-Scott and Nicholas Hatzis (eds), *Research Handbook on EU Human Rights Law* (Edward Elgar 2017), p. 326.

consumers and strengthen their ability to understand computational advertising mechanisms and processes.[73]

EU policy-makers responded to this type of transparency concerns and, in December 2020, the European Commission introduced a proposal for the so-called Digital Services Act aimed at modernising the rules governing online platforms and making the digital space safer for users.[74] In April 2022, a political agreement on the DSA was reached, and, on the 1st of November 2022, the DSA came into effect.[75]

The DSA introduced, among others, transparency obligations regarding recommender systems (Article 27 DSA) and online advertising for platforms (Article 26 DSA) in order to enhance consumer empowerment in case of targeted advertising. Article 26 DSA explicitly addresses the issue of online advertising transparency by stating that online platforms displaying advertising on their online interfaces:

shall ensure that, for each specific advertisement presented to each individual recipient, the recipients of the service are able to identify, in a clear, concise and unambiguous manner and in real time, the following:

(a) that the information is an advertisement, including through prominent markings […];

(b) the natural or legal person on whose behalf the advertisement is presented;

(c) the natural or legal person who paid for the advertisement if that person is different from the natural or legal person referred to in point (b);

(d) meaningful information directly and easily accessible from the advertisement about the main parameters used to determine the recipient to whom the advertisement is presented and, where applicable, about how to change those parameters.

Expanding beyond mere source transparency (sub (b) and (c): 'Who sent this?'), this provision explicitly demands parameter transparency (sub (d): 'Why me?'). The accompanying Recital 68 DSA clarifies that consumers should receive not only information on the main parameters used to target them, but also 'meaningful explanations of the logic used to that end, including when this is based on profiling.' Hence, the new transparency obligations are intended to capture the principles and criteria underlying automated processes of directing specific advertising to targeted consumers.

With regard to advertising systems used by very large online platforms and very large online search engines, Recital 95 DSA highlights particular risks that may arise from the scale of advertising activities – reaching more than 45 million active recipients of the service – and the 'ability to target and reach recipients of the service based on their behaviour within and outside that platform's or search engine's online interface.' In the light of this risk dimension, Recital 95 DSA identifies a need for 'further public and regulatory supervision.' In this vein, Article 39(1) DSA obliges very large online platforms to ensure public access, through application programming interfaces, to repositories of advertisements displayed on their online interfaces until one year after the last use of the advertising. With this additional transparency measure, the DSA seeks to facilitate supervision and research into emerging risks of online advertising, including (as Recital 95 indicates) exposure to 'illegal advertisements or manipulative techniques and disinformation with a real and foreseeable negative impact on public health, public security, civil discourse, political participation and equality.' In line with Article 39(2) DSA, the repository must include at least the following information:

(a) the content of the advertisement, including the name of the product, service or brand and the subject matter of the advertisement;

(b) the natural or legal person on whose behalf the advertisement is presented;

(c) the natural or legal person who paid for the advertisement, if that person is different from the person referred to in point (b);

(d) the period during which the advertisement was presented;

(e) whether the advertisement was intended to be presented specifically to one or more particular groups of recipients of the service and if so, the main parameters used for that purpose including where applicable the main parameters used to exclude one or more of such particular groups;

(f) the commercial communications published on the very large online platforms […];

(g) the total number of recipients of the service reached and, where applicable, aggregate numbers broken down by Member State for the group or groups of recipients that the advertisement specifically targeted.

Importantly, the DSA is not the first piece of legislation that deals with transparency for online advertising: In the EU, the General Data Protection Regulation (GDPR)[76] already sets forth obligations to inform consumers not only about the collection of personal data but also about the underlying purpose and logic of automated profiling, and potential consequences for consumers.[77] A number of GDPR Recitals refer to the principles of fair and transparent processing[78] and state further that those principles 'require that the data subject be informed of the existence of the processing operation and its purposes' and be provided with 'any further information necessary to ensure fair and transparent processing taking into account the specific circumstances and context in which the personal data are processed.'[79] In addition, consumers are to be informed of both the existence and consequences of profiling applied to them.[80] Apart from Recitals, Article 12 GDPR, most notably, requires data controllers to provide individuals with transparent and easily accessible information about how their personal data is processed.

The amendments to the UCPD, introduced by the Directive on the better enforcement and modernization of Union consumer protection rules, also include requirements 'to ensure

73 Natali Helberger et al., 'Macro and Exogenous Factors in Computational Advertising: Key Issues and New Research Directions' (2020) 49 *Journal of Advertising* 377, 382 and 386.
74 European Commission, *Shaping Europe's digital future: The Digital Services Act package*, <https://digital-strategy.ec.europa.eu/en/policies/digital-services-act-package> accessed 29 March 2025.
75 Id.
76 Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data ('General Data Protection Regulation'), OJ L 119, 4.5.2016, p. 1.
77 Natali Helberger et al., 'Macro and Exogenous Factors in Computational Advertising: Key Issues and New Research Directions' (2020) 49 *Journal of Advertising* 377, 382 and 386.
78 Recitals 39, 58, 60, 71, 78 GDPR.
79 Recital 60 GDPR.
80 Id.

adequate transparency towards the consumers'.[81] More specifically, the UCPD was enriched with a provision that mandates to provide to online consumers, when those search for products using keywords or other inputs, essential information on product ranking factors and their relative importance.[82]

Further measures are being taken at EU level to strengthen transparency obligations surrounding personalized online advertising practices. Notably, in March 2024, a Regulation on the transparency and targeting of political advertising has been adopted, which aims to enhance transparency in political advertising and regulate the use of personal data for political microtargeting.[83] Most importantly, Article 19(1)(c) of the Regulation sets forth an obligation to provide additional information to help individuals understand the targeting logic and techniques, including details on recipient groups, personal data used, targeting goals, artificial intelligence systems employed, dissemination period, and access to relevant policies.[84]

Apart from legislative initiatives, certain other measures are taken on the EU level in order to increase transparency, such as the Strengthened Code of Practice on Disinformation signed in 2022 by a number of platforms, tech companies and civil society,[85] that builds, in turn, on the earlier version of the Code first introduced in 2018.[86] The Strengthened Code puts in place enhanced transparency measures in the field of political advertising and in relation to recommender systems more broadly.[87] It acknowledges, for instance, 'the significant impact that recommender systems have on the information diet of users, and therefore recognise[s] that recommender systems should be transparent and provide users with the possibility to modify at any time their preferred options for the way that information is recommended to them.'[88]

As mentioned earlier, transparency was put forth as a potential remedy for mitigating the risks associated with OBA information bubbles. In order to determine whether, indeed, increased transparency in personalized advertising would motivate consumers to actively seek out alternative products in the market, we conducted, as mentioned already, a comprehensive study on consumer reactions to parameter transparency in algorithmic advertising. Based on desk research and semi-structured stakeholder interviews that explored the policy background to the proposed DSA transparency rules, our online study measured the reactions to the disclosure of common algorithmic practices, in an online consumer panel involving almost two thousand participants (N = 1,743).[89]

The overarching objective of the online study was to examine how parameter transparency in algorithmic advertising could be communicated to consumers in an effective way. With individual subquestions, our study measured consumers' perceptions of parameter transparency in algorithmic advertising and reactions to the disclosure of common algorithmic practices. More specifically, we examined whether transparency information was indeed perceived as transparent. In addition, we tested whether transparency information led to desirable effects of trust. Finally – and most importantly for the purposes of the present inquiry – our research design included the question whether transparency information was likely to encourage consumers to leave the algorithmic 'bubble' and actively seek information on alternative goods and services in the marketplace. This latter aspect – which we labelled 'effective coping strategies' – shed light on the spectrum of information about goods and services which, as a result of the advertising system and own initiatives, may finally reach consumers.

The study was fielded in October 2022. Participants (18+ years of age) of an online consumer panel in the Netherlands were approached to join our survey on advertising on social media, like Facebook, Twitter, Instagram, and YouTube. We explained to the participants that these platforms used a sort of formula (algorithm) to determine which advertisement one would see and that we were interested in their opinions on the explanations these platforms provided with regard to the targeting strategies underlying the algorithmic advertisement.

After consent, the following questions were asked before we showed one of ten disclosure scenarios:[90] which online platforms the participants sometimes used (if none, they ended the questionnaire), whether they trusted these platforms, and whether they interacted with online advertisements displayed on these platforms. The participants were then shown one of ten disclosure scenarios and asked about their perception of its transparency, impact on the trust they had in the platform, and their anticipated reaction, including potential initiatives to actively seek further information. We ended the questionnaire with demographics and a debriefing.

As already indicated, a total of 1,743 respondents completed the questionnaire of which 48 % were female. With an average age of 60.04 (standard deviation = 14.98), the sample was rather old compared to the population of the Netherlands. Most respondents completed a medium-level education (41.48 %) or a higher-level education (34.14 %). Dividing respondents randomly over the ten disclosure scenarios, we arrived at about 170 respondents per scenario (varying between 166 to 183 persons). These subgroups did not differ in terms of demographics and their social media use. As pointed out above, we used social media use as a filter question (in the sense of a gatekeeper criterion: if no social media use, no participation in the panel). Hence, all respondents in

81 Recital 21 to the Directive (EU) 2019/2161 of the European Parliament and of the Council of 27 November 2019 amending Council Directive 93/13/EEC and Directives 98/6/EC, 2005/29/EC and 2011/83/EU of the European Parliament and of the Council as regards the better enforcement and modernisation of Union consumer protection rules, PE/83/2019/REV/1, OJ L 328, 18.12.2019, p. 7.

82 Article 7(4a) of the UCPD.

83 Regulation (EU) 2024/900 of the European Parliament and of the Council of 13 March 2024 on the transparency and targeting of political advertising, PE/90/2023/REV/1, OJ L, 2024/900, 20.3.2024. For further discussion, see Ronan Ó Fathaigh, 'Proposal for a Regulation on the Transparency and Targeting of Political Advertising' (2022) 1 *IRIS* 2022 1.

84 Article 19(1)(c) of the Regulation on the transparency and targeting of political advertising, id.

85 The Strengthened Code of Practice on Disinformation 2022, <https://digital-strategy.ec.europa.eu/en/library/2022-strengthened-code-practice-disinformation> accessed 29 March 2025.

86 European Commission, 'Disinformation: Commission welcomes the new stronger and more comprehensive Code of Practice on disinformation' (Press release, 16 June 2022), <https://ec.europa.eu/commission/presscorner/detail/en/IP_22_3664> accessed 29 March 2025.

87 European Commission, *Shaping Europe's digital future: The 2022 Code of Practice on Disinformation*, <https://digital-strategy.ec.europa.eu/en/policies/code-practice-disinformation> accessed 29 March 2025.

88 The Strengthened Code of Practice on Disinformation 2022, 18, <https://digital-strategy.ec.europa.eu/en/library/2022-strengthened-code-practice-disinformation> accessed 29 March 2025.

89 Edith G Smit et al., 'Towards Transparency in Algorithmic Advertising' (forthcoming 2025).

90 The ten scenarios differed in terms of explanation of the algorithm (classification; prioritizing; association; filtering) and amount of information provided (details in terms of demographics or platform activity). See the figure in the Appendix for the development of scenarios.

our sample used one or more social media platform(s) at least 'sometimes'. The top 5 platforms mentioned by the respondents were Facebook (80.15 %), YouTube (66.32 %), Instagram (41.71 %), LinkedIn (33.16 %) and Pinterest (29.15 %).

Turning to the dimension that is of particular relevance to the current inquiry – the issue of effective coping strategies and respondents' inclination to actively seek additional product information – the response categories accompanying the ten transparency scenarios varied in terms of the employed algorithmic advertising technique (classification; prioritizing; association; filtering)[91] and the type of consumer information fuelling the algorithm. More concretely, the ten scenarios covered four different types of ad disclosure.

The first type of disclosure involved real-time-bidding, where respondents (n=530) were told they saw a specific ad because the advertiser had placed the highest bid to display it to them. However, no further details about the ad's targeting or audience were provided.

The second type, relating to parameter disclosure, provided respondents (n=513) with specific demographic details. They were informed that they were seeing a particular ad because they met certain personal characteristics that the advertiser sought, such as gender, age, place of residence, and language skills.

The third type, referred to as look-a-like data disclosure, was more focused on the respondent's activity and profile on the platform. Respondents (n=517) were told that the ad was shown to them because their profile resembled those of other individuals on the advertiser's customer list. Additional details were provided about the factors influencing this match, including the respondent's personal interests, their connections such as friends or people they followed, their interactions with previous ads or content, and their frequency of platform visits.

Finally, the fourth type was filtering disclosure, where respondents (n=183) were informed that the ad they saw was displayed because it had been reviewed and approved by the platform, ensuring it met the platform's advertising guidelines. However, no additional information was provided as to the specific nature of the ad or the targeting criteria behind it.

After receiving one of these ad disclosures, the respondents were asked about their behavioural reactions. To indicate their anticipated reactions, they could use a five-point scale ranging from 'very unlikely' to 'very likely'. With regard to coping strategies, they could indicate the likelihood of proactive reactions, such as 'clicking on the ad', 'looking for more information about the product in the ad' and 'looking for more information on comparable products and services of other brands'.

The results of our research revealed that, although transparency about OBA mechanisms increased trust,[92] consumers were not more inclined to explore alternative product options beyond those already suggested to them through the advertising system. Across all four disclosure types, proactive coping strategies, such as seeking alternative products, were minimal. For instance, the mean score for real-time bidding (2.58, standard deviation = 0.94) and filtering disclosure (2.50, standard deviation = 0.96) both indicated neutral reactions towards actively searching for alternative products.

A key expectation of the study was that disclosures using personal characteristics, such as demographic details or personal interests, would more likely trigger proactive behaviour compared to disclosures that did not include such details. However, the results did not support this hypothesis. In the category with parameter disclosure (demographic detail), the mean score was 2.44 (standard deviation = 0.94), and for the look-a-like data disclosure (personal interests), the mean was 2.52 (standard deviation = 0.92). These scores were similar to those in the other groups and indicated no clear tendency for proactive reactions.

In contrast to the lack of proactive responses, participants were somewhat more inclined to engage in defensive coping strategies, such as hiding the ad, changing their advertising preferences, or using the platform less frequently. The mean scores for defensive behaviours were slightly above the midpoint: 3.33 (real-time bidding), 3.28 (parameter disclosure), 3.37 (look-a-like data), and 3.21 (filtering disclosure). Respondents in the look-a-like data group showed the strongest inclination towards defensive behaviours, compared to the filtering group.

The results thus consistently show that disclosures regarding personal characteristics and interests, such as demographic or platform activity data, did not lead to proactive coping behaviours like searching for alternative products. Instead of stimulating consumers to actively seek alternative offers, the disclosures generally resulted in defensive behaviours, such as hiding the ad or limiting platform use.

It is important to note that the sample, with an average age of 60 and a relatively high level of education, might have influenced the outcomes. However, even with this demographic profile, proactive consumer behaviours were not triggered by any of the disclosure types. These findings suggest that the parameter transparency mandated by Article 26(1)(d) of the DSA – which requires platforms to disclose the parameters used in targeting ads – may not significantly impact consumer behaviour by fostering active market engagement or the disruption of advertising 'filter bubbles'.

2. Active 'Information Enrichment' by Platforms

Considering the ineffectiveness of enhanced transparency in addressing the issue of OBA filter bubbles as mentioned above, it appears necessary to explore alternative solutions. One viable option would be for advertising platforms to engage in so-called active 'information enrichment'. This could involve imposing a requirement on online platforms to diversify the range of advertisements shown through OBA processes, incorporating products from alternative brands that are not captured by personalization. It is important to clarify that this enrichment could involve either introducing additional advertisements or adjusting the variety of ads shown, without necessarily increasing the overall volume of ads.

The primary objective of imposing an information enrichment obligation would be to empower consumers by bringing a broader spectrum of choices to their attention. By actively introducing alternative brand advertisements, consumers will

91 Brahim Zarouali et al., 'The algorithmic persuasion framework in online communication: conceptualization and a future research agenda' (2022) 32(4) *Internet Research* 1076.

92 Id. See also Timothy Morey, Theodore Forbath and Allison Schoop, 'Customer Data: Designing for Transparency and Trust' (2015), <https://hbr.org/2015/05/customer-data-designing-for-transparency-and-trust> accessed 29 March 2025.

be exposed to a wider range of products, services, quality, and prices that advertisers would not otherwise provide due to their specific consumer profiles.[93] Additionally, such an exposure would allow consumers to view advertisements intended for different consumer groups, thereby enhancing public awareness and oversight.[94] Arguably, this would not only foster a healthier and more competitive market but would also elevate the consumers' freedom of choice bursting the filter bubbles they had been placed in.[95]

Of course, imposing obligations on online platforms to enrich advertisements is not without its challenges. Striking a balance between regulatory intervention and a free-market approach is crucial. The objective is not to stifle free competition but rather to provide consumers with a more diverse array of options while allowing advertisers to reach their target audiences. To achieve this goal, brand owners may need to be more tolerant of alternative products shown to consumers on the basis of consumer preferences concerning their goods and services. This was, indeed, the message in the aforementioned *Interflora/Marks & Spencer* judgment where the CJEU made it clear that, when an online ad uses a keyword related to a well-known trademark and suggests, without causing confusion and without imitating or harming the trademark owner's reputation, an alternative to that trademark's products or services, it is generally considered fair competition in that sector and is thus not without 'due cause'.[96]

The importance of enriching recommender systems with non-personalized alternative options was acknowledged by the DSA and formalized in Article 38. This provision states explicitly that, in addition to recommender system transparency, and insofar as providers of very large online platforms and of very large online search engines are concerned, 'at least one option for each of their recommender systems which is not based on profiling' shall be provided.[97] Article 38 DSA leaves, however, at least three uncertainties regarding its applicability to OBA.

First, it is not clear whether OBA falls within Article 38's notion of a 'recommender system' and hence whether it is captured by Article 38 at all. This uncertainty is exacerbated by the fact that, while the DSA establishes transparency obligations separately for recommender systems on the one hand (Article 27 of the DSA) and advertising on online platforms on the other (Article 26 of the DSA), an obligation to enrich online spaces with non-personalized alternative options is developed in relation to recommender systems only (Article 38 of the DSA). Such an asymmetry might leave the impression that the obligation of information enrichment applies exclusively to recommender systems, to the exclusion of online advertising more generally and OBA more specifically.

However, this interpretation is only viable if the concepts of a recommender system and online advertising are considered mutually exclusive, rather than one encompassing the other in certain contexts. Such a mutually exclusive understanding seems unlikely, nevertheless, in light of the DSA's own definitions of both 'recommender system' and 'advertising'. The former is described in Article 3(s) DSA as 'a fully or partially automated system used by an online platform to suggest in its online interface specific information to recipients of the service or prioritise that information, including as a result of a search initiated by the recipient of the service or otherwise determining the relative order or prominence of information displayed'. 'Advertising', in turn, is defined in Article 3(r) DSA as 'information designed to promote the message of a legal or natural person, irrespective of whether to achieve commercial or non-commercial purposes, and presented by an online platform on its online interface against remuneration specifically for promoting that information'. The kind of 'information' encompassed by the DSA definition of 'advertising' in Article 3(r) seems to align, in the online context, with the concept of 'information' outlined in Article 3(s)'s DSA definition of a 'recommender system'. This is so at least insofar as targeted forms of online advertisings are concerned. Just like targeted advertisements, recommender systems, in a general sense, focus on providing personalized recommendations. It hence can be argued that the term 'recommender system' encompasses targeted online advertising, including OBA as a form of the latter.

Second, even if a certain degree of clarity is established regarding whether OBA is covered by the notion of a 'recommender system', it remains uncertain whether the type of personalization inherent to OBA is encompassed by Article 38's definition of 'profiling'. In contrast to 'recommender system' and 'advertising', one searches in vain in the DSA for the legislative explanation of 'profiling'. Turning, in quest for clarity, to other legal texts, one can find the relevant definition in the GDPR. Article 4(4) thereof describes 'profiling' as 'any form of automated processing of personal data consisting of the use of personal data to evaluate certain personal aspects relating to a natural person, in particular to analyse or predict aspects concerning that natural person's performance at work, economic situation, health, personal preferences, interests, reliability, behaviour, location or movements'.[98] Given that OBA is a type of advertising based on the online user's *behavioural data*,[99] it appears to well match Article 4(4)'s GDPR definition of 'profiling', notably in its aspect of the 'analys[is] or predict [ion] […] concerning [the] natural person's […] *behaviour*'.[100] In the case of OBA, it can be added that the behavioural data also reflect a consumer's preference for certain goods or services.

93 Johann Laux et al. 'The Concentration-after-Personalisation Index (CAPI): Governing Effects of Personalisation Using the Example of Targeted Online Advertising' (2022) 9(2) *Big data & society* 1, 9. See also Johann Laux, Sandra Wachter and Brent Mittelstadt, 'Neutralising online behavioural advertising: Algorithmic targeting with market power as an unfair commercial practice' (2021) 58(3) *Common Market Law Review* 719, 723.

94 Johann Laux et al. 'The Concentration-after-Personalisation Index (CAPI): Governing Effects of Personalisation Using the Example of Targeted Online Advertising' (2022) 9(2) *Big data & society* 1, 9.

95 Johann Laux, Sandra Wachter and Brent Mittelstadt, 'Neutralising online behavioural advertising: Algorithmic targeting with market power as an unfair commercial practice' (2021) 58(3) *Common Market Law Review* 719, 723 (arguing that the protection of 'non-personalized outside options' is 'paramount to safeguarding consumer choice in the digital age, as consumers risk being siloed in their market choices based on their inferred cognitive and behavioural dispositions.').

96 Case C-323/09 *Interflora/Marks & Spencer*, 22 September 2011, ECLI:EU:C:2011:604, para. 91.

97 This provision is complemented and clarified by Recital 94 of the DSA, which states as follows: 'In addition, and complementing the transparency obligations applicable to online platforms as regards their recommender systems, providers of very large online platforms and of very large online search engines should consistently ensure that recipients of their service enjoy alternative options which are not based on profiling […]. Such choices should be directly accessible from the online interface where the recommendations are presented.'

98 Confirming that the GDPR's definition of profiling is the one to inform Article 38 DSA, see T-367/23 R, *Amazon Services Europe v Commission*, Order of the President of the General Court, 27 September 2023, EU:T:2023:589, para. 4.

99 See the discussion on OBA in the Introduction.

100 Emphasis added.

There is hence nothing in the combined reading of the relevant legislative provisions of both the DSA and the GDPR to suggest that OBA falls outside the scope of Article 38's DSA obligation of information enrichment.

In regard to the third uncertainty raised by Article 38 DSA, it pertains to the interpretation of 'one option […] not based on profiling' that providers of very large online platforms and search engines, utilizing recommender systems, are obligated to offer. Does it imply that users should have the choice to exclude only a specific level of personalization, or does it mean they can opt out of any personalization altogether? Arguably, the former is the type of information enrichment that is more beneficial for consumers, individual traders, and the regulation of supply and demand in a well-functioning market more generally, whereas the latter might have negative consequences for online trading practices. Indeed, at least in the context of OBA, fostering consumers' autonomy, fair competition, and a well-functioning market more generally does not entail opting out of personalized ads altogether. Instead, it involves enriching OBA with *some* non-personalized options. As mentioned earlier, a certain degree of personalization benefits consumers, providing them with product offers more likely to align with their purchasing interests, and individual sellers, making ads more engaging and efficient and hence optimizing, by extension, advertising budgets. Moreover, some level of personalization contributes to the overall functioning of the market by ensuring that supply and demand are not distorted, and relevant information on product offers reaches consumers. By contrast, choosing to opt out of any personalization in online advertising may lead to less relevant and engaging advertisements. This, in turn, could result in missed opportunities for both consumers and traders, as well as a higher frequency of irrelevant generic ads.

Despite the above considerations, it seems that Article 38 of the DSA is not necessarily aimed at offering (a specific percentage of) non-personalized recommendations alongside tailored ones. Instead, its main objective appears to provide customers with the option to opt out of all tailored recommendations altogether. At least this was the understanding of this provision advanced by Amazon and endorsed by the General Court in response to Amazon's request for interim measures.[101] These measures, pending a decision on the broader legal challenge, sought to suspend specific requirements under the DSA, including those stemming from Article 38. According to Amazon, an opt-out option for recommender systems under Article 38 meant no 'ability to customise', which would pose significant challenges in meeting customer expectations.[102] This was because, instead of showing products of potential interest, it would display products with little relevance to customers, meaning that it would not be able to help them discover new, relevant and useful items.[103] According to Amazon, this would undermine the core function of marketplaces, namely, to facilitate transactions, and would result in a bad shopping experience for the customers using the opt-out.[104] Although dismissing Amazon's request to suspend the application of Article 38 DSA to it, the General Court appeared to accept Amazon's reading of Article 38 obligation in terms of 'requir[ing] the platforms concerned to provide an opt-out for recommender systems without the possibility to customise.[105] The Court added further that it was then for the consumer to decide whether he or she wishes to make use of this opt-out option.[106]

In view of all the above, it may therefore be advantageous to improve the clarity surrounding the different aspects of Article 38 DSA. First, the applicability of the obligation in Article 38 regarding the enrichment of recommender systems with non-personalized alternative options should be specified within the specific context of OBA. Second, the obligation in Article 38, requiring the provision of 'at least one option for each of [the] recommender systems which is not based on profiling', should be interpreted in the OBA context as a requirement to augment OBA with non-personalized options rather than as an obligation to offer consumers the possibility of opting out of personalization altogether.[107]

As the DSA still is a relatively young piece of legislation, legislative amendments seem rather unlikely in the near future. The most efficient way to establish legal certainty regarding the relationship between Article 38 DSA and OBA would hence be through judicial interpretation. When the opportunity arises, it might be beneficial for the CJEU to provide some clarity in this regard.

As mentioned already, more refined solutions tailored specifically to the online advertising context may be necessary. Such solutions could, in contrast to the current General Court's reading of Article 38 DSA, combine personalized and non-tailored recommendations for individual customers. They also do not need to rely solely on the customer's discretion. In certain specific contexts (e. g., political advertising, disinformation, hate speech) where algorithms are used to determine the information supply, online platforms are already encouraged to facilitate content discovery, access to different news sources with alternative viewpoints and invest in tools that make it easier for people to find diverse perspectives about topics of public interest.[108] The 2022 Strengthened Code of Practice on Disinformation, for example, includes the introduction of 'warning labels from other authoritative sources' as one of the crucial tools to combat disinformation.[109] The Code's signatories also undertake to implement 'recommender systems designed to improve the prominence of authoritative information and reduce the prominence of [d]isinformation'.[110] Similarly, the EU Code of conduct on countering illegal hate speech online agreed upon in 2016 by the European Commission and a number of largest online platforms such as YouTube and Facebook envisages the need for measures to 'encourage counter and alternative narratives'.[111]

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101 T-367/23 R, *Amazon Services Europe v Commission*, Order of the President of the General Court, 27 September 2023, EU:T:2023:589.
102 Id., para. 30.
103 Id.
104 Id.
105 Id., para. 35 (emphasis added).
106 Id.
107 See also, demonstrating that the opt-out function remains mostly unused by consumers in the context of personalized advertising, Joanna Strycharz et al., 'Protective behavior against personalized ads: Motivation to turn personalization off' (2019) 13(2) *Cyberpsychology: Journal of Psychosocial Research on Cyberspace* 1.
108 The Strengthened Code of Practice on Disinformation 2022, <https://digital-strategy.ec.europa.eu/en/library/2022-strengthened-code-practice-disinformation> accessed 29 March 2025; The Strengthened Code of Practice on Disinformation 2018, <https://digital-strategy.ec.europa.eu/en/library/2018-code-practice-disinformation> accessed 29 March 2025.
109 The Strengthened Code of Practice on Disinformation 2022, 18, <https://digital-strategy.ec.europa.eu/en/library/2022-strengthened-code-practice-disinformation> accessed 29 March 2025.
110 Id., 20.
111 The EU Code of Conduct on Countering Illegal Hate Speech Online 2016, 3, <https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/combatting-discrimination/racism-and-xenophobia/eu-code-conduct-countering-illegal-hate-speech-online_en#theeucodeofconduct> accessed 29 March 2025.

These and similar measures to enrich and diversify online platform content can inspire analogous, more tailored initiatives in the field of OBA as well. Some related proposals have already been introduced in literature. For example, Laux et al. suggest adding noise to targeting, that is, exposing consumers to randomly distributed non-personalised adverts[112] – the practice that can, according to them, 'dilute the potential harm of overly concentrated personalisation.'[113] Milano et al., analogously, propose 'noisy targeting' as a means of tackling filter bubbles.[114] It is important to note, however, that, while it is, indeed, crucial that online targeting is enriched with alternative offers, mere 'annoyance' or 'noise' without meaningful alternatives might not effectively counter the potential harms of personalized advertising. To provide a genuine choice for consumers, mechanisms ensuring that proposed alternatives align sufficiently with individual preferences are imperative. Such mechanisms could be built, for example, on 'algorithmic recommender personae'[115] or lookalike users. Both of these mechanisms are explored in greater detail later in this section within the context of a discussion on the practical implementation of the information enrichment obligation.

In terms of its design, information enrichment could be construed in a manner similar to the must-carry obligation in the context of broadcasting and telecommunications regulations. Must-carry requires cable TV operators to include selected broadcasters' programs on their systems, aiming to preserve information circulation and cultural diversity by ensuring access to key TV channels, including national public and major private ones.[116] This practice, which is widespread in various countries, while limiting platform operators' economic freedom, is justified by the aim of serving the public's access to vital content.[117] The parallel between the 'must-carry' obligation in broadcasting and the proposed 'information enrichment' concept in online behavioural advertising lies in their shared goal of ensuring content diversity and promoting public interest. Whereas 'must-carry' rules mandate the inclusion of specific content on broadcast platforms, 'information enrichment' would require digital platforms to actively diversify online ads users encounter, both aiming to combat information bubbles and serve the broader public good through regulation.

In relation to the practical implementation of the information enrichment obligation, particularly the issue of determining the appropriate proportion of non-personalized ads (while keeping the number of ads constant) to present to consumers, Laux et al. argue, for instance, that there exists an optimal level of added noise in targeting, relative to the normative goals of safeguarding consumer choice and the economic interests of advertisers.[118] They propose quantifying this optimal noise level using a novel metric called the Concentration-after-Personalisation Index (CAPI), which builds upon the Herfindahl-Hirschman Index (HHI), commonly employed in competition law in order to measure the concentration on the market.[119] The latter, as Laux et al. persuasively demonstrate, may not, however, be capable of detecting information bubbles produced by OBA.[120] This is because, in the realm of online advertising, even when multiple sellers exist for a product or service, each individual consumer may be limited to receiving ads from only one seller or significantly fewer sellers than would be the case without targeting.[121] CAPI, in contrast, provides a metric to evaluate this concentration at the individual consumer level by treating each consumer as a unique 'market'.[122] It calculates a measure similar to HHI for each consumer to evaluate concentration in their exposure to personalized offers and services.[123]

Another concrete way of practical implementation of information enrichment can draw on the idea of 'algorithmic recommender personae' initially formulated within the context of news recommender systems.[124] Harambam, Helberger, and van Hoboken explain 'algorithmic recommender personae' as 'pre-configured and anthropomorphized *types of recommendation algorithms* from which people can choose from when browsing (news) sites'.[125] The idea was put forth as a practical method to incorporate voice into the domain of algorithmic news recommendations[126] by providing users with a single-click solution for tailoring personalized news suggestions according to their momentary news mood and purpose.[127] Harambam, Helberger, and van Hoboken link this one-click solution to five distinct types of algorithmic recommender personae (although the list is not intended to be exhaustive[128]): the Explorer (allowing to receive news from unexplored territory), the Diplomat (providing news 'from the other side'), the Wizard (tailored at 'surprising news'), the Moral Vacationer (focused on the supply of 'guilty pleasures' news), and the Expert (furnishing specialized news based on previous consumption).[129] By clicking on any of these five types of personae, the user is to be provided with an opportunity to quickly switch from one type of news recommendation algorithm to another depending on her current needs.[130] Importantly, this news recommendation algorithm is to be implemented on top of and *in addition to* recommendations personalized for each individual user on the basis of her previous online reading behaviour and news consumption history.[131] As a result, online users are empow-

112 Johann Laux et al. 'The Concentration-after-Personalisation Index (CAPI): Governing Effects of Personalisation Using the Example of Targeted Online Advertising' (2022) 9(2) *Big data & society* 1, 8.
113 Id., 1.
114 Silvia Milano et al., 'Epistemic fragmentation poses a threat to the governance of online targeting' (2021) 3(6) *Nature Machine Intelligence* 466, 469–70.
115 Jaron Harambam, Natali Helberger and Joris van Hoboken, 'Democratizing algorithmic news recommenders: How to materialize voice in a technologically saturated media ecosystem' (2018) 376(2133) *Philosophical Transactions Royal Society A* 1.
116 Tomasz Targosz, 'Must Carry – Must Offer – Must Infringe' [Blog post], *Kluwer Copyright Blog*, 4 July 2013, <https://copyrightblog.kluweriplaw.com/2013/07/04/must-carry-must-offer-must-infringe/#:~:text=Must%2Dcarry%20has%20been%20usually,on%20a%20cable%20provider's%20system> accessed 29 March 2025.
117 Id.
118 Johann Laux et al. 'The Concentration-after-Personalisation Index (CAPI): Governing Effects of Personalisation Using the Example of Targeted Online Advertising' (2022) 9(2) *Big data & society* 1, 3.
119 Id.
120 Id., 2.
121 Id.
122 Id..
123 Id., 2, 6-7.
124 Jaron Harambam, Natali Helberger and Joris van Hoboken, 'Democratizing algorithmic news recommenders: How to materialize voice in a technologically saturated media ecosystem' (2018) 376(2133) *Philosophical Transactions Royal Society A* 1. For the follow up on this idea, see Lawrende Van den Bogaert, David Geerts and Jaron Harambam, 'Putting a Human Face on the Algorithm: Co-Designing Recommender Personae to Democratize News Recommender Systems' (2022) *Digital Journalism* 1.
125 Jaron Harambam, Natali Helberger and Joris van Hoboken, 'Democratizing algorithmic news recommenders: How to materialize voice in a technologically saturated media ecosystem' (2018) 376(2133) *Philosophical Transactions Royal Society A* 1, 13 (emphasis in the original).
126 Id.
127 Id., 13-14.
128 Id., 16.
129 Id., 14.
130 Id.
131 Id., 15, 16.

ered with very concrete ways to influence their online news recommendations, deploying them for the specific purposes they have in mind.[132]

Building upon the example of an 'algorithmic recommender personae' in the online news context, personalization in online advertising can be structured around the same logic. Online customers would continue to receive behavioural advertisements tailored to their specific purchasing histories and profiles. However, in addition to these personalized ads, they could also choose to explore alternative product suggestions within the same category, based on different 'purchaser personae' or perspectives.[133] For example, rather than simply receiving ads for trendy fashion items from the 'Trendy Fashionista' persona, the user might switch to a 'Sustainable Fashionista' persona, showcasing eco-friendly options within the broader fashion category. This would allow users to explore diversity within specific product segments, such as fashion, while remaining in control of the diversity they experience. Just as with an 'algorithmic recommender personae' developed for the digital news context, an online customer would then be able to switch momentarily between these and other purchasing personas depending on their current buying needs, preferences, or ethical considerations, providing both a more varied and personalized shopping experience while helping to break out of potential filter bubbles that might form solely based on past purchasing behaviour.

Another potential approach to enhance the information provided to users through online advertising, while still ensuring its relevance to them, is to consider basing online purchase recommendations not only on a certain customer's past buying history but also on the relevant online purchasing histories of similar (lookalike) users.[134]

It is acknowledged that the detailed planning of the practical implementation of 'information enrichment', including a more in-depth development of online purchaser personas and/or optimal proportion of alternative non-personalized offers on the market, may require a separate research effort. What can be already asserted with certainty, however, is that the system should aim to maximize diversity as a precaution against the formation of information bubbles in online advertisement spaces.

Importantly, requiring advertisers to ensure consumers receive diversified product information aligns with fundamental rights requirements, particularly with the State's positive obligation under Article 10 (freedom of expression) of the ECHR, which mandates the State to be 'the ultimate guarantor of pluralism'.[135] This obligation also extends to commercial speech, including commercial advertising, which is widely recognized as protected free speech in Europe and beyond.[136] Commercial speech is protected not just for reasons of personal autonomy,[137] but also because it plays a role in democratic decision-making. While not directly part of public discourse, commercial expression conveys valuable information that contributes to informed decision-making by consumers, which is integral to the functioning of a democratic society.[138] Consequently, commercial speech is granted some level of protection, although less robust than that afforded to political or public interest speech.[139] Given this protection for advertisements under freedom of expression, the State's positive obligation to be the ultimate guarantor of pluralism also encompasses ensuring that a diverse range of online offers reaches consumers. It is, however, important to emphasize in this context that the State itself must actively fulfil this human rights obligation and cannot merely outsource it to online platforms, by contrast to what was done in the context of the DSA-introduced obligation on online platforms to proactively filter their users' content in order to prevent copyright infringement.[140]

V. Conclusion

This paper has explored the legal implications of online behavioural advertising and its potential to create information bubbles. While designed to cater to consumer preferences, these bubbles raise significant normative concerns by limiting consumer choice, autonomy, and market competition. Enhanced transparency, as enshrined in the Digital Services Act, has emerged as a promising tool to empower consumers and promote fair competition. However, our research has revealed that transparency alone is not particularly effective at bursting the OBA-associated information bubbles, as consumers, even when informed about the source and parameters of personalized advertising messages, do not actively seek alternative solutions, thus remaining within predetermined personalized advertising spaces. It hence has become apparent that alternative solutions are necessary to address the problem. One promising approach is imposing on advertising platforms an obligation to enrich existing online advertisements with products from alternative brands. While this approach is not without challenges, it is crucial to develop more tailored initiatives in the realm of online behavioural advertising, particularly in view of the information enrichment's alignment with fundamental rights requirements and the positive obligation to promote pluralism in commercial

132 Id., 16.

133 Cf. the concept of 'buyer personae' developed, by contrast to 'algorithmic recommender personae', not from the perspective of a user, but from the perspective of marketing strategies, Adele Revella, *Buyer personas: how to gain insight into your customer's expectations, align your marketing strategies, and win more business* (Hoboken, NJ: John Wiley & Sons 2015).

134 Cf., from the advertisers' perspective, Artem Popov and Daria Iakovleva, 'Adaptive look-alike targeting in social networks advertising' (2018) 136 *Procedia computer science* 255; Bruce Ratner, 'Identifying the best customers: Descriptive, predictive and look-alike profiling' (2001) 10(1) *Journal of targeting, measurement and analysis for marketing* 66.

135 *Manole and Others v Moldova* App no 13936/02 (ECHR, 17 September 2009, CE:ECHR:2009:0917JUD001393602), para. 99.

136 See, for the first decisions recognising the free speech protection of commercial expression, in Europe, *X. and Church of Scientology v. Sweden* (dec.) App no 7805/77 (ECHR, 5 May 1979, CE:ECHR:1979:0505DEC000780577), para. 5, and, in the US, US Supreme Court, *Virginia State Board of Pharmacy v. Virginia Citizens Consumer Council, Inc.*, 425 U.S. 748 (24 May 1976).

137 Bruce EH Johnson and Kyu Ho Youm, 'Commercial Speech and Free Expression: The United States and Europe Compared' (2009) 2 *Journal of International Media & Entertainment Law* 159, 170.

138 Robert Post, 'The Constitutional Status of Commercial Speech' (2000) 48 *UCLA Law Review* 1, 15.

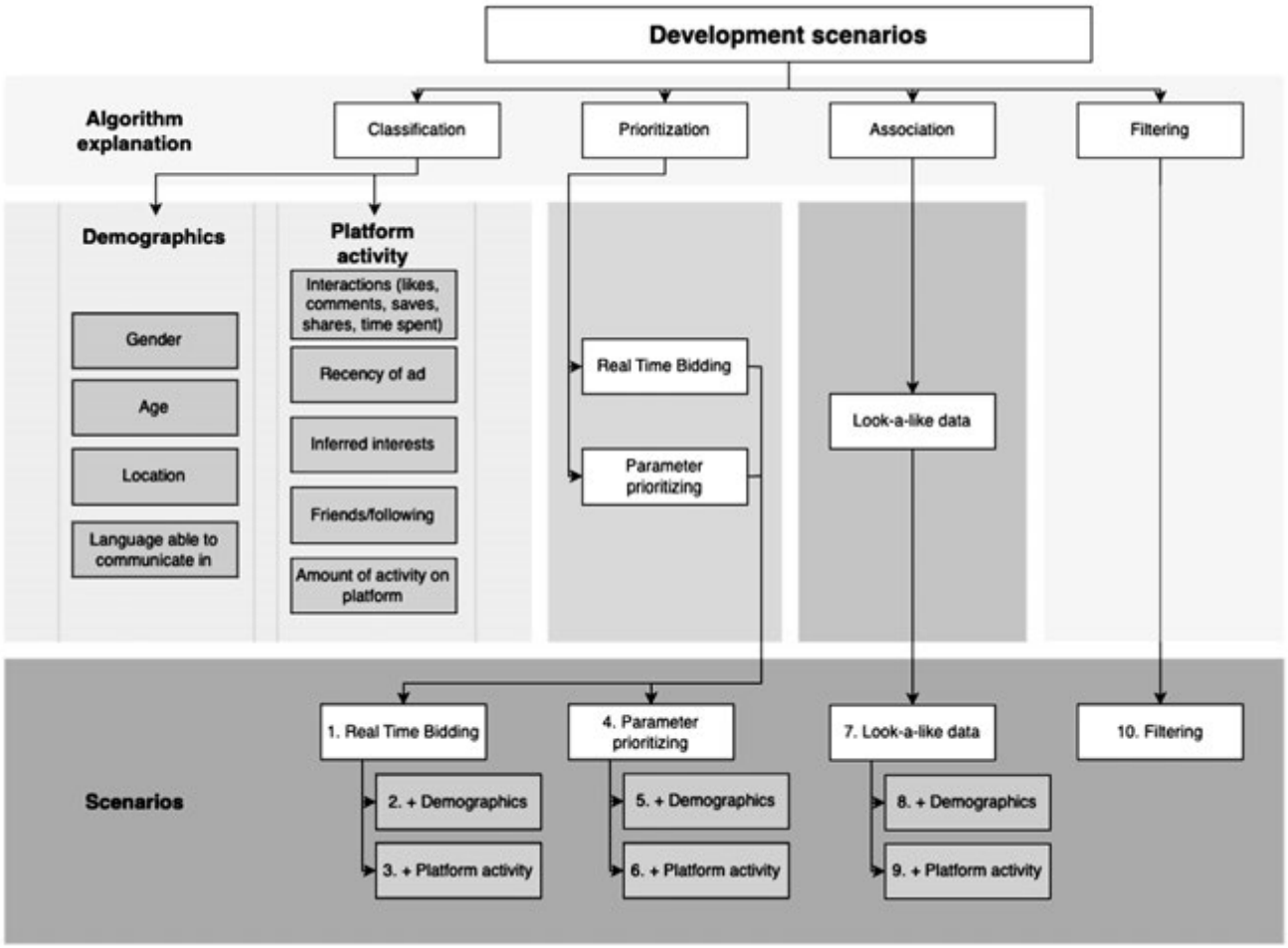
139 See e.g. *Markt Intern Verlag GmbH and Klaus Beermann v Federal Republic of Germany* App no 10572/83 (ECHR, 20 November 1989, CE:ECHR:1989:1120JUD001057283), para. 33; *Casado Coca v Spain* App no 15450/89 (ECHR, 24 February 1994, CE:ECHR:1994:0224JUD001545089), para. 50; *Demuth v Switzerland* App no 38743/97 (ECHR, 5 November 2002, CE:ECHR:2002:1105JUD003874397), para. 42; and *Mouvement raëlien suisse v Switzerland* [GC] App no 16354/06 (ECHR, 13 July 2012, CE:ECHR:2012:0713JUD001635406), para. 61. A similar distinction between the low-value commercial speech and other types of expression is drawn also in the US: see, e.g., US Supreme Court, *Virginia State Board of Pharmacy v. Virginia Citizens Consumer Council, Inc.*, 425 U.S. 748, 772, note 24 (24 May 1976); US Supreme Court, *Central Hudson Gas & Elec. Corp. v. Public Service Commission of New York*, 447 U.S. 557, 563-66 (20 June 1980).

140 For a comprehensive exploration of the EU legislator's tendency to outsource human rights obligations to the platform industry in this context, see Martin Senftleben, João P Quintais, and Arlette Meiring, 'How the EU Outsources the Task of Human Rights Protection to Platforms and Users: The Case of UGC Monetization' (2024) 38(3) *Berkeley Technology Law Journal* 933.

advertising. More tailored initiatives for OBA can draw on already existing measures in other areas, such as political advertising, countering disinformation, addressing hate speech, or mirroring 'must-carry' obligations in broadcasting.

As the landscape of online advertising continues to evolve, it is clear that regulatory frameworks must adapt to ensure a fair and competitive marketplace. This paper contributes to the ongoing discourse on OBA and filter bubbles, emphasizing the importance of balancing personalization with consumer choice, competition, and well-functioning of the market, and it sets the stage for further research and policy development in this area.

Appendix



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