

DISCUSSION PAPER

Towards algorithmic pluralism¹

Can the EU force very large social media platforms to give their users a choice of content curation algorithms?

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Laurens Naudts**Introduction**

By prioritising engagement and advertising revenue, social media platforms' algorithms shape not just what information users see, but also how they understand and interact with the world.

To date, recommender systems that are optimised to extract value from consumers are the norm, and the default. The resulting multitude of social harms — such as the amplification of divisive and polarising content — highlight the need for systemic change.

Under the Digital Services Act (DSA), Very Large Online Platforms (VLOPs) and Search Engines (VLOSEs) are required to allow users to opt out of seeing profiling-based recommendations. But they are not currently investing in more beneficial and desirable alternatives, nor allowing other market players to provide such alternatives.

To address the systemic risks caused by VLOPs and VLOSEs-owned recommender systems, in particular with regard to civic discourse and integrity of electoral processes (required by Article 34 DSA), EU regulations and institutions should:

- 1 Effectively protect consumers from algorithmic manipulation and digital asymmetry²;
- 2 Offer citizens and civil society real agency over the construction (logic) of these digital environments;
- 3 Give citizens the freedom to use recommender systems of their choice (including systems provided by third parties);
- 4 Create favourable conditions for market players to provide alternative, competitive and fair recommender systems.

These objectives should inform the following legal safeguards, rights and obligations:

- 1 Consumers should be informed about any normative assumptions upon which recommender systems have been built, for which purposes they have been optimised, and the consequences such optimisation strategies have on the content they see.
- 2 Personalised recommendations should be an opt-in system where consumers can:
 - pick which data points and parameters are considered by the recommender system;
 - make their goals for a given session more explicit (e.g. by answering to the prompt: “What are you here for?”).
- 3 Consumers should be able to adjust the logic of the recommender system to their changing needs and interests via easy-to-use tools made available for this purpose – and recognising widely used signals, such as the Do Not Track indicators.
- 4 Consumers should have a right to demand not only alternative recommendation options from the platform (which is already prescribed by Article 38 of the DSA), but also third-party options for standalone recommender systems offering alternative feeds as well as external add-on functionalities, such as translation tools.
- 5 VLOPs should document and publish information on the choices made during the ideation, design, and development process of recommendation systems to enable third parties, including affected end-users, citizens, civil society organisations, academia, and regulators, to assess whether a system is sufficiently aligned with democratic principles³.
- 6 The EU should support the creation of a digital public infrastructure enabling the development of alternative models for the digital economy where power and control over critical infrastructure and data is decentralised, redistributed and democratised.

There are several (existing or upcoming) opportunities in the policy space which we can use to pursue these objectives. This discussion paper describes them with the intention to inform People vs Big Tech’s strategy and advocacy on the Digital Services Act, Digital Markets Act and upcoming Digital Fairness Act. Please bear in mind that this paper is meant to be iterative and subject to revision, as we progress with our strategy and advocacy.

A roadmap to algorithmic pluralism

Algorithmic pluralism in the European digital ecosystem requires strong enforcement of existing regulations and the introduction of well-designed interoperability obligations through specific regulatory changes. Over the next few months, the European Commission and national regulators have the chance to seize five complementary and interrelated policy opportunities to achieve this goal.

These opportunities include:

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| Opportunity 1 | Mandating horizontal ⁴ social media interoperability in a revised Digital Markets Act (DMA); |
| Opportunity 2 | Promoting algorithmic pluralism through the enforcement and revision of the Digital Services Act (DSA); |
| Opportunity 3 | Introducing protection against algorithmic manipulation and client-to-service vertical interoperability in the upcoming Digital Fairness Act (DFA); |
| Opportunity 4 | Prohibiting the use of behavioural data in default versions of the recommender systems on the basis of the GDPR; |
| Opportunity 5 | Funding the development of digital (public) infrastructure, including open protocols, for social media interoperability. |

FIRST OPPORTUNITY

Mandate horizontal social media interoperability in a revised Digital Markets Act (DMA)

The three-year review prescribed under Article 53 of the DMA specifically requires the European Commission to assess whether the “scope of” Article 7 (horizontal messaging and call interoperability) should be extended to social networking services in 2026/27.

Article 7(1) states: “Where a gatekeeper provides number-independent interpersonal communications services that are listed in the designation decision pursuant to Article 3(9), it shall make the basic functionalities of its number-independent interpersonal communications services interoperable with the number-independent interpersonal communications services of another provider offering or intending to offer such services in the Union, by providing the necessary technical interfaces or similar solutions that facilitate interoperability, upon request, and free of charge.”

Extending the scope of Article 7 to social media services would allow users of different platforms and services to interact with one another (e.g. share posts, like, respond) and open up possibilities to choose alternative, third-party feeds and recommender systems. This would allow users to leave a social media service with minimal switching costs (signaling to the platform that they do not find their conduct acceptable or have found a better alternative) or stay on the platform

and, thanks to competitive pressure forcing it to open up, choose an alternative recommender system to improve their experience.

Opening up dominant social media platforms via interoperability requirements would pave the way for algorithmic pluralism by enabling new services to enter the market and grow without having to overcome the tipping point “chicken-and-egg” obstacle, whereby the ability to attract users is contingent upon an existing user base, the absence of which inhibits initial growth and market entry.

Mandating dominant social media platforms to offer their users a choice of third-party recommendation and moderation tools would therefore be an ideal complement to introducing horizontal social media interoperability in the DMA.



Horizontal messaging service interoperability is complex and resource-intensive to implement, thus it is appropriate that it is imposed only on dominant services with truly significant market share (WhatsApp, Facebook Messenger, Instagram DMs, iMessage, FaceTime, Gmail, Outlook and maybe a couple of others). The DMA is an ideal legislative vehicle for that given its focus on competition between services and because only a handful of NI-ICSSs⁵ can be designated. Art. 7 is intended to counteract anti-competitive network effects of dominant messaging services.

Horizontal social media interoperability, on the other hand, pursues other objectives besides market competition such as allowing for more dynamic and user-responsive content moderation and curation, preventing the concentration of informational power and consequently protecting democracy, freedom of expression and freedom of information. These objectives are not relevant with respect to just dominant services but also those which are nonetheless still significant, even if they have smaller market shares and do not benefit from significant network effects. The DSA may serve as a better legislative vehicle given that its criteria for (societally significant but not necessarily dominant) VLOPs are more suitable, less subjective and would also apply to non-commercial services.

Whereas vertical interoperability solutions merely improve the experience of a user on a platform they may otherwise want to leave, **horizontal interoperability provisions provide a way to “bootstrap” vertical interoperability and algorithmic pluralism solutions.** To prevent a myriad of edge cases, platform/protocol-specific behaviors or missing features from destroying the user experience, horizontal interoperability should not be limited to basic features.



Translation or language-learning extensions for instant messaging apps could be an interesting example of “bootstrapping” vertical interoperability through horizontal interoperability. Even though WhatsApp does not offer vertical interoperability solutions, (third-party) clients connecting to a third-party service that interconnects with WhatsApp can offer such an extension. Such alternative offerings made possible by horizontal interoperability obligations can also push the gatekeepers to voluntarily open up vertical interoperability for third parties on their own services. Currently Telegram is the only mainstream messaging app with a public API that allows others to build third-party clients and bots.

The extraterritorial application of Article 7 of the DMA (or any horizontal interoperability obligation), which allows EU-based users of the interoperating service to interact with all users of the gatekeeper’s service regardless of their location, is critical for horizontal social media interoperability in the EU to take off, and would make interoperable solutions more attractive for providers seeking to access a larger user base.

The European Commission should endorse a more expansive (extraterritorial) interpretation of Article 7 and, during DMA revision, clarify its extraterritorial application regarding interactions of EU users with non-EU users.

Articles 3(1)(b) and (2)(b) DMA should also be amended to better accommodate horizontal interoperability, where the gatekeeper does not allow outside business users on their core platform service. The requirement making the designation of a platform as gatekeeper on its core services conditional on being an important gateway for business users to reach end users is what prevented Twitter, iMessage and digital assistants from being designated as core platform services, and should be amended.

SECOND OPPORTUNITY

Promote algorithmic pluralism through the enforcement and revision of the Digital Services Act (DSA)

To extend the benefits of algorithmic pluralism to the majority of users, horizontal interoperability should be introduced for a broader set of actors than those regulated by the DMA. However, the DSA, which is the legislative framework governing very large online platforms (VLOPs) and search engines (VLOSEs), lacks explicit provisions on algorithmic pluralism and interoperability.

Article 27(3) of the DSA on user control over recommender systems⁶ should be enforced against non-compliant platforms. Currently, where platforms have introduced alternative options to profiling-based recommender systems as per Article 38⁷, these are often hard to find for end users because profiling-based algorithmic recommendations are set by default, whilst alternative options are tucked away behind additional swipes or taps.

Alongside enforcing compliance, the Commission and the Digital Services Coordinators should take a more expansive reading of Article 27 of the DSA to:

- **Encourage platforms to offer users the option of a third-party content curation service** (or a third party recommender system), in addition to offering a non-profiling-based version of VLOPs/VLOSEs' own recommender system;
- **Ensure transparency into the market logic behind a recommender system**, the extent to which it prioritises personal content over news, which aspects of the personal profile the recommendation is matched with, the efforts a platform has undertaken to ensure the quality and diversity of the pool of information the recommender draws on, and what has been done to ensure diversity. Recommender systems should also include content that reflects specific interests of marginalised groups (for instance by expanding the interpretation of "main parameters" used in recommender systems).⁸

At a minimum, users of social media platforms should be offered a **functionality to curate their profiles, including what personal information can be used for this purpose, and train content curation algorithms to follow their preferences and interests** (which may change over time).

As argued by Naudts and others in "[A Right to Constructive Optimization: A Public Interest Approach to Recommender Systems in the Digital Services Act](#)",⁹ in order to make informed choices about content curation, people need to understand the consequences¹⁰ of their choices for others in the social network. Therefore, increased user-agency should be combined with transparency of envisaged

(societal and democratic) consequences of the various competing logics that might exist on a platform. For example:

*VLOPs should document and make public information on choices made during the ideation, design, and development process of recommendation systems to enable third parties, including affected end-users, citizens, civil society organisations, academia, and the regulator, to assess whether a system is sufficiently aligned with democratic values.*¹¹

The DSA's obligation on VLOPs and VLOSEs to mitigate systemic risks to civic discourse, media freedom, and users' right to receive information should be used to argue that **authoritative and trustworthy sources should be more visible**,¹² particularly where other regulatory frameworks (such as Article 3 of the European Media Freedom Act) safeguard users' right to access diverse and independent media. As argued by Naudts and others, «*when evaluating risk sources, the notion 'data-related practices of the provider' (Article 34 (2)(e) DSA) should not only be viewed in light of the right to privacy and respect for personal data but also in terms of efforts to ensure the quality of training and testing data, to address biases, increase the diversity of the content pool of recommended information, or give users agency over their profiles*».¹³

The Commission should also **provide further guidance on mitigation measures under Article 35 of the DSA**. The guidance could include offering users a choice of a third-party content curation service (or a third party recommender system) as a recommended mitigation measure for systemic risks caused by engagement-based recommender systems.

To comply with Article 35 on mitigation measures and carry out reliable risk assessments, **VLOPs should enable third-parties to test and scrutinise optimisation goals** and their impact on, or relationship to, public values and societal interests.¹⁴

Algorithmic pluralism can also be promoted through **soft regulatory instruments, such as voluntary standards** (see Article 44(i) of the DSA) and codes of conduct (see Article 45 of the DSA). However, that would require pressure from the Commission on key industry players.

The DSA is much clearer on risk assessment obligations than it is on positive design obligations for VLOPs/VLOSEs. Therefore, the Commission (in collaboration with researchers and CSOs) should explore **participatory design obligations** for platforms to accommodate the needs and interests of end-users, including their interest in using third-party content curation services. At the same time, «*given the diversity of end-users' needs and technology's emergent capabilities, ex ante measures (like participatory design obligations) should always be complemented with strong accountability and contestation measures ex post*».¹⁵

The five-year review of the DSA that is to be carried out in 2027/2028 also provides an opportunity to strengthen Article 27 and prescribe that users be given greater control over the functioning of the recommender systems, for example by extending the **right to remove and modify (contest) parameters/signals used in recommender systems**.¹⁶

Amending Article 27 under the five-year DSA review may become unnecessary, however, if algorithmic pluralism and interoperability obligations were to be prescribed under new regulatory tools such as the forthcoming Digital Fairness Act (an opportunity we discuss below).

THIRD OPPORTUNITY

Introduce protections against algorithmic manipulation and client-to-service vertical interoperability in the Digital Fairness Act¹⁷

As argued by Natali Helberger and others in “[Digital Fairness for Consumers](#)”, «manipulative tactics undermine the opportunity for end-users to exert deliberate control over their digital environment. Moreover, when end-users are manipulated to act in accordance with the operator’s interests, they are also denied the opportunity to have their desires and interests heard and recognised».¹⁸

According to Naudts and others, if automated systems affect people's fundamental freedoms, and have an impact on their socio-economic mobility, end-users should be able to exercise democratic agency over how those systems are built “under conditions of inclusive governance, rather than commercial (platform) logics alone”. A **right to constructive optimisation**, which entails availability of meaningful alternative options in how a recommender system functions (including choices among operators and personalised services that meet consumer expectations), could achieve that.¹⁹

The Digital Fairness Act could complement the existing legal framework, and partially solve problems discussed by Natali Helberger and others, by:

- Introducing a general client-to-service (vertical) interoperability mandate



This type of interoperability is much easier for many developers to implement, and already proved quite popular (e.g. see third-party Reddit and Twitter clients). It opens the possibility of building on top of the service, offering a better experience, greater convenience, and at least partial protection against product quality degradation or user manipulation, as it makes it harder to employ dark patterns on third-party clients. **Client-to-service interoperability** can therefore facilitate algorithmic choice even in the absence of a specific legal mandate.

Social media platforms’ users could modify their experience by choosing a third party client as their interface to the recommender systems. Third party clients can serve as personalised filters protecting users from unwanted content or amplifying the content of their choice (e.g. “show me posts from the accounts I follow first”).

This obligation, perhaps more than any other discussed in this working paper, has the potential to quickly, visibly and tangibly improve the user experience on social media and other platforms. It would also address the European Parliament’s Report on Addictive Design of Online Services and Consumer Protection, which calls on the Commission to explore opportunities to promote opening up the social network infrastructure so that users can access third-party applications or add external functionalities.

- Defining “digital asymmetry” and “digital vulnerability”, where digital commercial practice should be considered unfair if it exploits digital asymmetry or digital vulnerability

L. Naudts argues: «If affected persons cannot question and contest the ideation, development and deployment of data-driven systems, others, and those with the power to datafy in particular, are left to dictate by which means, through whose efforts, for whose benefit, and in accordance to which values and world views,

people's social and economic narratives are decided upon».²⁰ As a consequence, in the case of VLOPs, affected persons become vulnerable to having their rights to self-determination and self-development, including their enjoyment of fundamental rights, unjustifiably interfered with.

- **Introducing the concept of (digital) fairness by design** to embed critical assessments of how products and services create digital asymmetries and exploit individual vulnerabilities in their design process
- **Prohibiting unfair digital commercial practices**²¹ and creating a black list of such unfair practices, including:
 - the **use of attention-exploiting algorithms** in default versions of recommender systems
 - **practices seeking to lock-in users** (e.g. allowing an easy import of data but not making it possible to export that data)



Existing EU regulation does not contain a clear definition of manipulation of consumer or citizen behaviour. In the recitals and articles where this concept appears, its relation to other problematic forms of influences (e.g. deception, dark patterns, nudging) remains unclear.

- **Introducing a right to “constructive optimisation”**, which requires the presence of meaningful alternative options in relation to a particular recommender system's functioning and to other operators (including service providers and platforms) and to **“meaningful personalisation”** that would improve the quality of service and meet the expectations of consumers.²²



Recommender systems often operate on a logic that is optimised for profit or attention. While these objectives may seem legitimate from shareholders' perspective, they should be subsidiary to functional goals actively chosen by end-users. EU law should correct this power imbalance and ensure that end-users have meaningful control tools. In Helberger's words: «Structures which incentivise the production of alternatives to profiling-based recommendations (and align them with societal interests rather than private profit) are required in all areas of EU law touching on optimisation».



Naudts, Helberger, Veale & Sax²³ propose the following building blocks of the right to constructive optimisation:

1. The design, operation, and evaluation of VLOPs' recommendation systems must be organised in a way that actively promotes people's enjoyment of self-development and self-determination, either as individuals or as members of social groups — including persons that are marginalised and/or otherwise rendered vulnerable — as to ensure, inter alia, the equal protection, realisation, and enjoyment of their fundamental rights, including the right to privacy, equality and non-discrimination, and freedom of expression.
2. When organising the ideation, design, operation, and evaluation of these systems, utmost consideration must therefore be given to the viewpoints of individuals and communities expressed to the platform via easy-to-use communication channels made available for this purpose.
3. VLOPs must document and make public information on choices made during the ideation, design, and development process of recommendation systems to enable third parties, including affected end-users, citizens, civil

society organisations, academia, and the regulator, to assess whether a system is sufficiently aligned with democratic values.

4. The burden of proof that this obligation has been complied with is on the platform operator.

FOURTH OPPORTUNITY

Prohibit the use of behavioural data in default versions of the recommender systems on the basis of the GDPR

In order to comply with data protection law, default versions of recommender systems should not be based on **behavioural profiling** – i.e. the observation and collection of passive data about how users behave and interact on the platform in order to infer their interests. Instead, **the default feed should only use data actively provided by the user for this very purpose**, such as **input signals** (e.g. the interests declared by the user when building their profile) as well as **explicit feedback** (e.g. “show me more/show me less” signal sent by clicking a specific button).

When enforcing the GDPR, courts and Data Protection Authorities should fully clarify that **end-users cannot be forced to provide their behavioral data** (including data produced by their devices) **for the unnecessary purpose of recommendation**. Otherwise, the design of recommender systems is contrary to Article 25 of the GDPR, which prescribes data protection by design and by default, as well as the principle of data minimisation.

In the *Meta v. Bundeskartellamt* case, the Court of Justice of the European Union has already come close to declaring that individual consent may be required for content personalisation in general, including in recommender systems serving user generated content. The referring court asked the CJEU about validity of the legitimate interest as a legal basis for “personalised content and advertising”. The judgement appears not to differentiate between the personalisation of ads and the personalisation of user-generated content feeds. The Court confirmed that competition authorities can investigate GDPR violations, particularly how online platforms (Meta, in this case) combine user data across their services without properly obtained consent to enable targeted advertising.

FIFTH OPPORTUNITY

Fund the development of digital (public) infrastructure, including open protocols for social media interoperability²⁴

The EU should also take proactive non-regulatory measures to promote and support the growth of alternative models for the digital economy where power and control over critical infrastructure and data is decentralised, redistributed and democratised.

Investing in digital public infrastructure²⁵ would not only help reclaim the control of critical components of the digital economy out of the hands of Big Tech monopolies, but also help speed and scale alternative business models and support independent, high-quality journalism.

The EU should *not* aim at setting up public-backed alternative services (e.g. state social media platforms). Instead, the goal should be to build parallel underlying

infrastructure on which new applications can develop, and to foster a new ecosystem that is not driven *solely* by private investment.

To facilitate the development of European technologies built on digital public infrastructure:²⁶

- The European Commission should invest 10 billion EUR in a European Sovereign Tech Fund dedicated to supporting sovereign technology, digital public infrastructure and research projects meant to facilitate interoperability (e.g. to make sure that a user's existing social graph can be easily carried over to a new service);
- The forthcoming EU Multiannual Financial Framework should include additional funding for this purpose, focusing on EU added value and financing the base-layer of European Digital Public Infrastructure;
- The Commission and member states should leverage public procurement rules to procure services from providers that respect European regulations and principles, including openness and human-centric design;
- Resources for traditional media should be expanded through contributions from online platforms (e.g. from new digital taxation);
- The EU should support media self-regulation bodies and provide incentives for media outlets that comply with their standards;
- The Commission should create funding instruments for civil society and research organisations to hold optimisation systems to account; in particular, public funding should support the development of adversarial interoperability²⁷ projects that work through browser extensions or patched official apps;
- The Commission should help finance projects that facilitate interoperability and algorithmic choice and the development of software libraries that would make it easier for third-parties to work with the interoperability solutions of the gatekeepers;
- The way research performances are evaluated and rewarded should be adjusted to acknowledge their societal impact under the new digital framework.

Conclusion

As a movement working towards social media interoperability, we are facing difficult tactical choices. As shown in this discussion paper, there are no clear legal provisions in place which we could simply enforce via complaints or strategic litigation to advance algorithmic plurality.

However, there are some important upcoming opportunities that will allow us to promote the narrative formulated in PvBT's "Beyond Big Tech" manifesto.²⁸ In the best case scenario, our advocacy will lead to the establishment of social media interoperability as a binding legal obligation. The most probable scenario emerging from the options described in this paper is a combination of:

- 1 A revision of Article 7 of the DMA (extended to social networking services);**
- 2 The development of new norms in the upcoming DFA process (in particular the right to constructive optimisation);**
- 3 Public funding (allocated by the EU and/or Member States) to support the development of human-centric and rights respecting social web infrastructures.**

In order to make this happen, we need a clear advocacy strategy and a work plan for 2026-2027. This paper provides a basis for discussion for the development of such a strategy.

1. Algorithmic pluralism consists in having diverse algorithms within the information and decision-making systems coexist to ensure that no single algorithm becomes the arbiter of relevance by severely restricting the information people are exposed to. The concept is particularly relevant in the context of social media platforms, where algorithms influence content visibility and user engagement. See: Future of Technology Institute, "Algorithmic Pluralism: Towards Competitive & Innovative Information Ecosystems" (2025), https://drive.google.com/file/d/1DuZsJ-IScqt4h_zpWaSBGffhIirOV38q/view
2. According to BEUC, the European Consumer Organisation, "Digital asymmetry is a term to describe how modern data-driven services put consumers at an unprecedented disadvantage. As they go online, they are faced with environments where traders control both the information that is presented and the entire choice architecture. (...) Even if consumers realise their online experience is personalised, they may never know the extent or mechanics of this personalisation, or the distortion it introduces into their view of the market or the world at large, and the choices they make as a result." "Protecting fairness and consumer choice in a digital economy", The European Consumer Organisation, February 10, 2022, https://www.beuc.eu/sites/default/files/publications/beuc-x-2022-015_protecting_fairness_and_consumer_choice_in_a_digital_economy.pdf.
3. This proposal draws from: Naudts, L., Helberger, N., Veale, M. and Sax, M. A Right to Constructive Optimization: A Public Interest Approach to Recommender Systems in the Digital Services Act. J Consum Policy (2025). DOI: 10.1007/s10603-025-09586-1
4. Horizontal interoperability allows different systems at the same level of a value chain or stack to communicate and exchange data, while vertical interoperability enables communication and data exchange between different levels of a value chain or across different layers of a system.
5. NI-ICS stands for Number-Independent Interpersonal Communication Services (e.g. WhatsApp, iMessage, Facebook Messenger, Telegram and Signal).
6. According to Article 27(3) of the DSA, online platforms, when using recommender systems, should provide users with a functionality that allows them to select and modify how information is prioritised and displayed to them. We argue that users should be able to customise those systems, which includes the ability to choose which parameters are most important in determining what content is shown and to adjust the relative weighting of those parameters.
7. Article 38 of the DSA mandates that providers of very large online platforms (VLOPs) and very large online search engines (VLOSEs) using recommender systems must offer users at least one option that is not based on profiling. This means that users should be able to choose a recommendation system that doesn't personalize content based on their data.
8. See also: Naudts, L., Helberger, N., Veale, M., Sax M., "A Right to Constructive Optimization: A Public Interest Approach to Recommender Systems in the Digital Services Act". J Consum Policy (2025). DOI: 10.1007/s10603-025-09586-1
9. *Ibidem*.
10. The transparency requirements under Articles 12-15 of the GDPR are also in line with this argument.
11. Naudts et al., "A Right to Constructive Optimization (...)"
12. For example: public agendas such as WHO, national electoral commissions, publishers ranking high in NewsGuard ratings, certified according to Journalism Trust Initiative indicators or Trust Project News Partners.
13. Naudts et al., "A Right to Constructive Optimization (...)"
14. Allen J., Gurley S., Bonilla S., Shen N., *Global Transparency Audit*, Integrity Institute, 2025, <https://drive.google.com/file/d/1MJHx4cx24XV4UZUfW1iIoMKPRkqIyLQa/view>
15. Naudts et al., "A Right to Constructive Optimization (...)"
16. As argued above, to some extent individual and collective (civil society/ researchers') right to contest the parameters used in recommender systems can already be inferred from Article 27 (expansive reading).
17. The recommendations in this section are largely inspired by the work of Natali Helberger and Laurens Naudts.
18. Helberger N., Kas B., Micklitz H., Namysłowska M., Naudts L., Rott P., Sax M., Veale M., "Digital Fairness for Consumers", BEUC (2024)
19. Naudts et al., "A Right to Constructive Optimization (...)"
20. Naudts, L. (2024, June). The digital faces of oppression and domination: A relational and egalitarian perspective on the data-driven society and its regulation. In Proceedings of the 2024 ACM Conference on Fairness, Accountability, and Transparency (pp. 701-712).
21. A digital commercial practice is unfair if it materially distorts or is likely to materially distort the consumer's autonomy.
22. Naudts et al., "A Right to Constructive Optimization (...)"
23. *Ibidem*.
24. Some of the proposals in this section have been endorsed by 12 civil society groups in their appeal to Danish Presidency of the EU (Gdańsk, 2025), <https://en.panoptykon.org/joint-statement-digital-sovereignty-2025>

25. There is no agreed definition of 'digital public infrastructure'. The G20 describes DPI as "a set of shared digital systems that should be secure and interoperable, and can be built on open standards and specifications to deliver and provide equitable access to public and / or private services at societal scale and are governed by applicable legal frameworks and enabling rules to drive development, inclusion, innovation, trust, and competition and respect human rights and fundamental freedoms".

26. Some of the proposals in this section have been endorsed by 12 civil society groups in their appeal to Danish Presidency of the EU (Gdańsk, 2025), <https://en.panoptykon.org/joint-statement-digital-sovereignty-2025>

27. Adversarial interoperability, also known as competitive compatibility, is the ability of a new product or service to interact with an existing, often dominant, product or service without the explicit permission or cooperation of the original creator. It's a form of interoperability that is achieved despite the original manufacturer's potential resistance, often through reverse engineering or other methods.

28. People vs Big Tech, *Beyond Big Tech: A manifesto for a new digital economy*, <https://peoplevsbig.tech/beyond-big-tech-a-manifesto-for-a-new-digital-economy/>