To Refresh, not Replace Competition: Fine-Tuning the Ex-Ante Approach to Regulating Data Combination Practices

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Antitrust in digital markets is gravitating towards ex-ante regulation. This is prompted by growing concerns for user data exploitation and rival input foreclosure on the part of big tech platforms. One area that embodies such concerns pertains to data combination practices—more specifically, within-conglomerate data sharing, where scaled-up data collection is monetized through avenues such as attention brokerage. A recent effort to address such concerns is Article 5(a) of the draft Digital Markets Act, which proposes to impose a proscriptive obligation upon gatekeeper platforms. In that context, this paper rationalizes this ex-ante, comprehensive regulatory approach to competition preservation as represented by Article 5(a). It argues that, to honor the blended goal of data protection and antitrust, complementary ex-ante measures need to be devised based on this provision. Particularly, the highly dynamic ecosystems competition among tech platforms should be accounted for. This paper discusses possible complementary measures to preserve competition under two directions: partial ecosystems compatibility and data as labor.

Keywords: antitrust, attention brokerage, data combination, data protection, ex-ante regulation, within-conglomerate data sharing

1. Introduction

Competition law is undergoing a major shift. The more economics-based approach to ex-post antitrust enforcement, which had been championed in Europe and elsewhere for more than a decade, is receding into the background.[1] Now the spotlight is on ex-ante regulation, directed pointedly towards big tech firms to pursue certain social outcomes. Authorities around the world are showing interest in the shift. The EU is in the process of adopting the Digital Service Act (DSA) and the Digital Markets Act (DMA), which wield proactive regulatory power against digital platforms. In the US, the Biden administration is gathering momentum towards adopting more vigorous regulations against monopolizing big tech firms. China is not slow. For years it

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[1] Pablo Ibáñez Colomo, 'Whatever Happened to the "More Economics-Based Approach"?' (2020) 11(9) Journal of European Competition Law & Practice 473, 474.

maintained a laissez-faire approach to its tech industry but has dramatically stepped up regulatory and antitrust scrutiny against domestic tech giants since the end of 2020.[2] Being inclined to a 'campaign-style' enforcement due to their limited manpower and resources,[3] Chinese antitrust officials may welcome a less burdensome and time-efficient ex-ante approach.

This shift pertains first and foremost to the 'means' of competition law. It is powered by a growing consensus that traditional antitrust tools have shown inadequacy in addressing anticompetitive harms caused by big tech firms. For example, the Facebook/Instagram and Facebook/WhatsApp mergers have been considered retrospectively anticompetitive; the traditional, static assessment lenses had failed to detect the anticompetitiveness.[4] The forwarded solution is ex-ante regulation, which is poised as a more tech-informed and fast-acting variation of generic competition law enforcement.[5]

More fundamentally and controversially, the shift concerns the 'ends' of competition law. In recent years, a momentum-gaining view is that the welfare-centric paradigm[6] of competition law needs an overhaul vis-à-vis the big tech economic reality. Advocates of this view resort to the pre-Chicago School wisdom that considers economic decentralization a safeguard to democracy and argues for non-welfare values to be incorporated in the goals of competition law.[7] Along that line, it was suggested that the ex-ante shift

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[2] Raymond Zhong, 'With Alibaba Investigation, China Gets Tougher on Tech' *The New York Times* (23 December 2020) <https://www.nytimes.com/2020/12/23/business/alibaba-antitrust-jack-ma.html#> accessed 12 April 2021.

[3] This campaign-style law enforcement is meant to 'mobilize China's vast bureaucratic machine to impose swifter and stricter penalties on legal violations' and 'use sophisticated media and propaganda strategies to achieve their policy objectives'. See Angela Huyue Zhang, 'In China, Behave or Face a Campaign' *Bloomberg* (7 January 2021) <https://www.bloomberg.com/opinion/articles/2021-01-06/china-s-regulators-turn-to-communist-style-campaigns-to-keep-things-in-line> accessed 12 April 2021. See also, Yuan Yang, 'Beijing Orders Chinese Media to Censor Coverage of Alibaba Probe' *Financial Times* (8 January 2021) <https://www.ft.com/content/62fe82c5-b058-4dd0-bb15-e9428593f078> accessed 12 April 2021.

[4] Tim Wu, 'Blind Spot: The Attention Economy and the Law' (2019) 82(3) Antitrust Law Journal 771, 775, 777, 795.

[5] Jonathan B Baker, 'Protecting and Fostering Online Platform Competition: The Role of Antitrust Law' (15 January 2021) Journal of Competition Law & Economics <https://doi.org/10.1093/joclec/nhaa032> accessed 12 April 21, 8–9.

[6] To be clear, people who agree on a welfare-centric paradigm of competition law may still dispute amongst themselves as to what kind of welfare should be upheld. On this matter, see, for example, Barak Y. Orbach, 'The Antitrust Consumer Welfare Paradox' (2011) 7(1) Journal of Competition Law & Economics 133, 145, 159.

[7] Lina Khan, 'The New Brandeis Movement: America's Antimonopoly Debate' (2018) 9(3) Journal of European Competition Law & Practice 131, 131; Lina M. Khan, 'Amazon's Antitrust Paradox' (2017) 126 Yale LJ 710, 740–43. See also generally, Tim Wu, *The Curse of Bigness: Antitrust in the New Gilded Age* (Columbia Global Reports 2018).

could serve as sector-specific 'test fields' for these progressive advocates to concretize and experiment with their visions.[8]

To be sure, ex-ante regulation is no new thing. But considering the highly vibrant digital economy, questions may still be asked as to what circumstances would warrant this ex-ante approach of antitrust, and how is this approach to be implemented therein. This article examines these questions in the context of data combination practices regulation. Such practices have gained prominence in the era of big data and digital ecosystems; they are an effort of tech platforms to adapt to an increasingly data privacy-protective business environment.[9] In this adaptation, an old problem (of user data exploitation) is glossed over and a new one (of market power entrenchment) is brought forward. This calls for more apt regulation. As it happens, sharper rules are being devised, such as Article 5(a) of the DMA. This article examines the rationales of an ex-ante approach to tackling problematic data combination practices, its usability in the ecosystems competition context, and some potentially helpful complementary measures. This article answers these questions through literature review and critical analysis of cases and legal provisions.

This article is structured as follows. Part II sets a stage of behavioural advertising, where the models of attention brokerage and the importance of data collection are highlighted. Part III distinguishes two types of data collection practices: third-party tracking and within-conglomerate data sharing. Part IV describes and rationalizes the use of ex-ante regulation in competition law; relatedly, it comments on Article 5(a) of the draft DMA. Part V draws from research literature for a discussion on the likely dynamic competition among tech platforms and whether the current ex-ante regulatory approach has accounted for such competition. Based on Article 5(a), Part VI proposes some further ex-ante measures to sustain the observed competition whilst upholding the intended data protection standard. Part VII concludes. A note on the terminology: First, this article uses 'antitrust law' and 'competition law' interchangeably. [10] Second, it considers 'within-conglomerate data sharing' to be a subtype of 'data combination practices'. It focuses on the

[8] Doug Melamed, 'Antitrust Law and Its Critics' (2020) SSRN Electronic Journal <https://doi.org/10.2139/ssrn.3519523> accessed 12 April 2021, 21.

[9] Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (Public Affairs 2019) 138, 140 (describing a cycle—'through which surplus extraction is normalized'—of how tech firms dispossess consumers of their behavioural data; the third stage of this cycle is 'adaptation', where firms alter their practices in superficial but tactically effective ways to 'satisfy the immediate demands of government authorities, court rulings, and public opinion').

[10] In the EU context, 'competition rules' and 'antitrust rules' are used interchangeably on non-legislative occasions to refer to the rules governing anticompetitive agreements and abuse of dominance.

former for the exploitative abuses it could entail and the ecosystems competition that is at stake.

2. The Background to Behavioural Advertising

2.1. Data as Capital

In contemporary capitalism, data has been viewed as a form of capital for its vast economic potential.[11] Capitalists are driven to accumulate data capital as much as they are to accumulate financial capital.[12] This data-as-capital view underpins a symbiotic relationship between data accumulation and its algorithmic processing: On the one hand, consumer behavioural data is considered exhaust, unless capitalists collect and valorise it through algorithmic processing.[13] On the other hand, algorithmic capabilities improve by feeding on data that is of volume, variety, velocity, and veracity.[14] Needless to say, significant sunk investments are required of a data capitalist for developing data collection and processing capabilities to efficiently derive value.[15]

One way to derive value from behavioural data is 'to profile and target' the subjects from whom the data is collected. The underlying presumption is that 'knowing more about people will, in some way, translate to more profit and/or power'.[16] This presumption finds validation in the business model of attention brokerage, where a two-sided platform provides content/service to one side (consumers) to attract attention and brokers the captured attention to the other side (advertisers).[17] There, consumer users pay with their attention

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[11] Jathan Sadowski, 'When Data Is Capital: Datafication, Accumulation, and Extraction' (2019) 6(1) Big Data & Society 1, 1–2. See also, 'The World's Most Valuable Resource Is No Longer Oil, but Data' *The Economist* (6 May 2017) <https://www.economist.com/leaders/2017/05/06/the-worlds-most-valuable-resource-is-no-longer-oil-but-data> accessed 12 April 2021.

[12] Sadowski (n 11) 4, 9.

[13] Imanol Arrieta-Ibarra and others, 'Should We Treat Data as Labour? Moving Beyond "Free"' (2018) 108 AEA Papers and Proceedings 38 <https://doi.org/10.1257/pandp.20181003> accessed 12 April 2021, 39. See also, Zuboff (n 9) 338 (coining the term 'prediction products' to explain how data capitalists derive value from the accumulated data).

[14] Zuboff (n 9) 338; Arrieta-Ibarra and others (n 13) 38–39.

[15] Sadowski (n 11) 5–6 (listing five types of outcomes of the data capital accumulation-valorisation process). See also, Martin Peitz, 'Economic Policy for Digital Attention Intermediaries' (2020) SSRN Electronic Journal <https://doi.org/10.2139/ssrn.3654009> accessed 12 April 2021, fn 18 (highlighting the economies of scope that data can bring to the accumulation-valorisation process, additional to the expected value-creation outcomes of a dataset).

[16] Sadowski (n 11) 5.

[17] Wu (n 4) 772 (explaining the business model of 'attention brokerage': 'to attract attention by offering something to the public (entertainment, news, free services, and so on), and then reselling that attention to advertisers for cash').

instead of money.[18] Simply, attention brokerage is an apparent solution for a data capitalist intending to derive value from data through the profile-and-target way. This entails users being collected of their behavioural data, in addition to being brokered of their attention (discussed in the next subsection).

To be sure, attention brokerage is not a necessity for the profile-and-target way of data value derivation. In scenarios where a consumer is charged a positive monetary price for accessing a service (where behavioural data flows), value derivation may be accomplished via algorithmic first-degree price discrimination.[19] Also, a firm could explore the economies of scope in data where the service accessed by a group of consumers—upon paying with either money or attention—has complementary links to another service.[20] For instance, the fintech firm Ant Group is a mobile payment service (Alipay) provider to consumers and merchants alike; this gives it access to these users' payment flows. In turn, it becomes able to efficiently provide the additional microloans intermediation services, because the payments data affords it to determine more accurately a user's creditworthiness.[21]

2.2. Three Attention Brokerage Models

Widely adopted by Internet companies, behavioural (or targeted) advertising is the result of attention brokerage being purposed for data capitalism.[22] It is explained through the following three figures.[23]

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[18] Notably, in some situations, a consumer could be paying a positive monetary price in addition to their attention. There, the consumer is paying for two distinguishable items: the basic 'free' service and a value-added service. See Peitz (n 15) 8. Also, although no money is exchanged, how much a consumer is paying is measurable to a certain extent by the opportunity cost that the consumer is willing to incur for spending time consuming the content. See David S Evans, 'Attention Platforms, the Value of Content, and Public Policy' (2019) 54(4) Review of Industrial Organization 775, 779–80.

[19] Namely personalized pricing. See Nicholas Economides and Ioannis Lianos, 'Restrictions on Privacy and Exploitation in the Digital Economy: A Market Failure Perspective' (2020) SSRN Electronic Journal <https://doi.org/10.2139/ssrn.3686785> accessed 12 April 2021, 42.

[20] See n 113 and accompanying text.

[21] 'Queen of the Colony: What Ant Group's IPO Says about the Future of Finance' *The Economist* (10 October 2020) <https://www.economist.com/briefing/2020/10/10/what-ant-groups-ipo-says-about-the-future-of-finance> accessed 12 April 2021.

[22] Peitz (n 15) 6, 8 (finding that all major Internet firms have adopted to some degree behavioural advertising).

[23] Although all three figures in this article were conceived originally, Figure 2 bears a resemblance to the figure presented on p 788 of Wu (n 4).

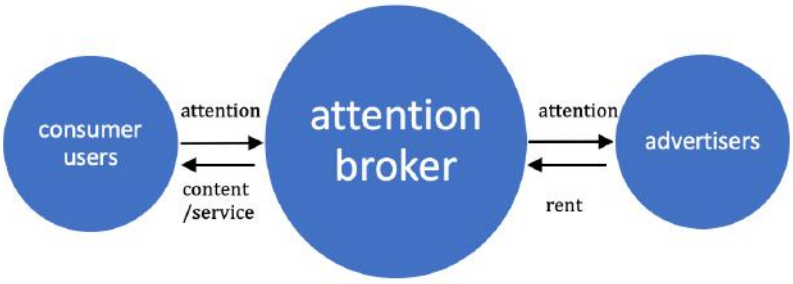

Figure 1: The model of traditional contextual advertising

The basic advertising model (see Figure 1) has been around since the nineteenth century.[24] For the broker, the intricacy is to decide how much attention to be resold to advertisers, if it is the content/service rather than ad information that attracts attention.[25] An advertiser buys attention to accomplish purchase conversion.[26] Nonetheless, having bought the brokered attention does not guarantee that accomplishment, because there is a potential problem of mismatch:[27] the brokered attention may have come from someone who is temporarily or permanently unreceptive to the displayed ad.[28] For example, an ad of vacation flights would be unpersuasive to a person who is terrified of flying; it would also be ineffective on a person who does fly for leisure but is not planning a trip.

One solution to this mismatch problem is 'contextual advertising': an advertiser decides where to display an ad by using a publisher's content as a

[24] Tim Wu, *The Attention Merchants: The Epic Struggle to Get Inside Our Heads*, (Paperback edn, Atlantic Books 2017) 8 (tracing the lineage of the attention merchants).
[25] Wu (n 4) 789 (terming the striking of this balance as the setting of an 'attentional price').
[26] Evert de Haan, Thorsten Wiesel and Koen Pauwels, 'The Effectiveness of Different Forms of Online Advertising for Purchase Conversion in a Multiple-Channel Attribution Framework' (2016) 33(3) International Journal of Research in Marketing 491, 494–95 (listing nine forms of advertising and assessing their purchase conversion effectiveness). See also, Wu (n 4) 784–86 (identifying three routes to attain the said mission: creating demand, influencing demand elasticity, and serving as a complementary to actual products in conveying product information).
[27] This would be a problem for advertisers but simultaneously a (short-term) surplus for consumers, as the mismatch allows consumers to withdraw their attention while still enjoying the traded content. See David S Evans, 'The Economics of Attention Markets' (2017) SSRN Electronic Journal <https://doi.org/10.2139/ssrn.3044858> accessed 12 April 2021, 11; Evans (n 18) 777–78 (explaining the matchmaking function of attention platforms).
[28] Wu (n 4) 783–84 (describing that in practice, 'the attention of different people is valued differently in the marketplace' and even within a similarly valued group of people, 'certain mental states are considered more valuable').

proxy for the receptive audience.[29] But this proxy not always accurate. Another, more efficient solution is 'behavioural advertising': it utilizes a user's behavioural data to draw a profile and matches the most relevant ads to that profile (see Figure 2). It promises advertisers higher conversion rates. It could benefit consumers as well because common experience indicates that, all else being equal, most consumers prefer ads that are personally relevant to those that are not.[30] That being said, when behavioural advertising is accomplished through personal data accumulation, for some consumers things might stop being equal.

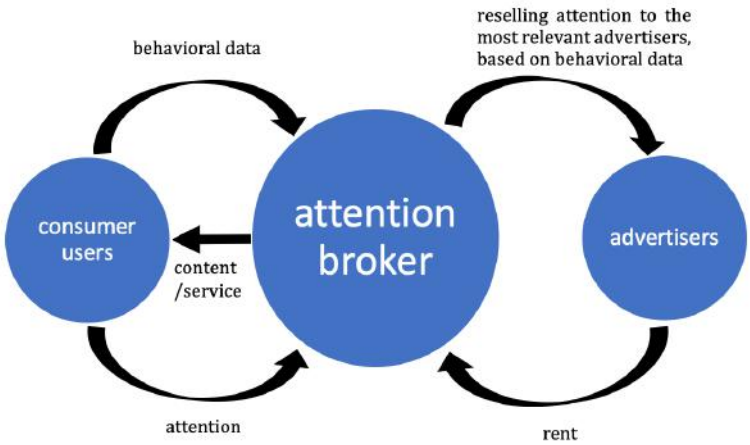

Figure 2: The model of behavioural advertising

'Advertising networks' are an advanced variant of the behavioural advertising model. There, the attention brokerage (including profile drawing) task is outsourced from an attention capturer to a more specialized entity (see Figure 3).[31] This specialized broker works on two fronts: (1) to thicken the two sides that need to be matched (ie attention capturers and buyers), and (2) to intensify data-based profile drawing for efficient matchmaking.[32] Other factors besides profile accuracy may also affect the matchmaking efficiency.

[29] Damien Geradin, Dimitrios Katsifis and Theano Karanikioti, 'Google as a De Facto Privacy Regulator: Analysing Chrome's Removal of Third-Party Cookies from an Antitrust Perspective' (2020) SSRN Electronic Journal <https://doi.org/10.2139/ssrn.3738107> accessed 12 April 2021, 7.
[30] Evans (n 27) 10.
[31] There could be even more specialized intermediary platforms on both sides of the ad space trade. They are referred to as demand- and supply-side platforms in ad exchanges. For an illustration, see José Estrada-Jiménez and others, 'Online Advertising: Analysis of Privacy Threats and Protection Approaches' (2017) 100 Computer Communications 32, 35.
[32] Alvin E Roth, *Who Gets What—and Why: The New Economics of Matchmaking and Market Design* (First Mariner Books edn, Mariner Books/Houghton Mifflin Harcourt 2016) 23–24, 65, 70–71 (contrasting 'matching' markets to 'commodity' markets and explaining the former's imperatives of market thickening and efficient matching).

The first one is congestion. As the two sides thicken, their matchmaking may take more time, dragging down the efficiency.[33] To avoid this, real-time automated bidding is commonly used in ad exchanges.[34] Another factor is attention verifiability. The algorithm-laden intermediation may impede advertisers' ability to ascertain the quality of the bought attention. This gives capturers an opportunity to fake attention for profit, unless the broker institutes verification measures.[35] Where these brokers fail to do that, attention faking becomes a thriving underground business.[36]

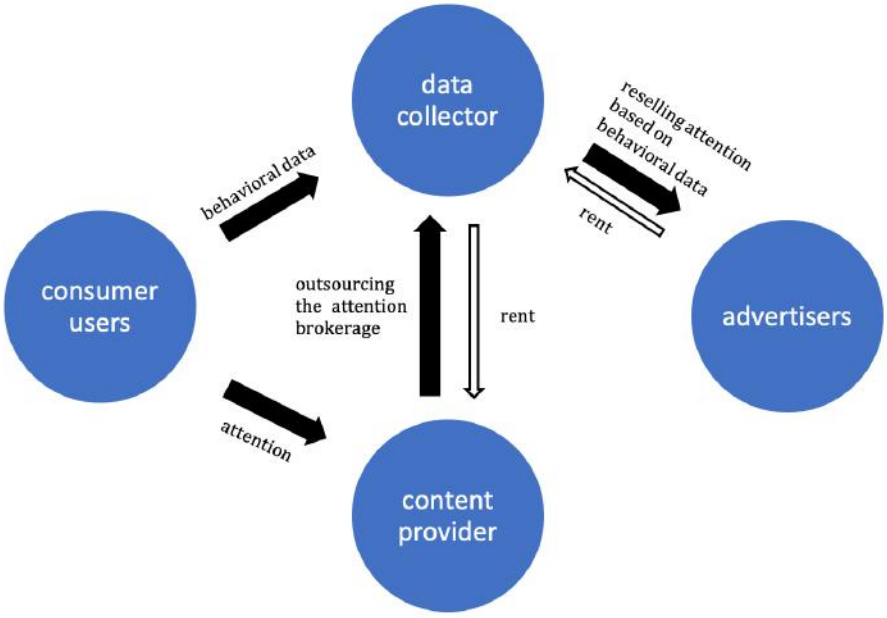

Figure 3: The model of advertising networks

[33] ibid 97.

[34] Google, 'The DoubleClick Ad Exchange' < https://static.googleusercontent.com/media/www.google.com/en//adexchange/AdExchangeOverview.pdf> accessed 12 April 2021. It was estimated that Google could collect as much as 42 cents of every dollar spent on advertising through its exchange network. See Leah Nylen, 'Google Dominates Online Ads—And DOJ May Be Ready to Pounce' *Politico* (4 June 2020) <https://www.politico.com/news/2020/06/04/google-doj-ads-302576> accessed 12 April 2021. Notably, although sharing the same roots, ad exchanges and ad networks have nuanced differences. See Indrajeet Deshpande, 'Ad Network vs. Ad Exchange: Key Differences and Similarities' (*ToolBox*, 18 May 2020) <https://www.toolbox.com/marketing/programmatic-advertising/articles/ad-network-vs-ad-exchange-key-differences-and-similarities/> accessed 12 April 2021.

[35] In current advertising models, verification is done through user tracking. It is one of the five fundamental use cases of tracking-based advertising. See Geradin, Katsifis and Karanikioti (n 29) 9–10.

[36] Qian Tong and others, 'The Fake Engagement Powering China's Internet' *Caixin* (5 August 2019) <https://www.caixinglobal.com/2019-08-05/in-depth-the-fake-engagement-powering-chinas-internet-101447356.html> accessed 12 April 2021.

2.3. Data in Behavioural Advertising

As shown above, behavioural advertising necessitates the collection of behavioural data from consumer users alongside the brokering of their attention. From the viewpoint of consumer welfare, it yields two benefits. The first one is the 'free' content/service, for which consumer users pay with their attention and data. Supposedly, they would not have been able to access it without an intermediary because of the prohibitively high transactions costs.[37] As behavioural data collection improves the efficiency of advertising, the 'free' content/service may also be improved.[38] This stems from a possible economy of scope between producing an attention-attracting content/service and reselling attention.[39] The second one is the increased relevance of ads. This is linked to the first benefit: consumers would generally prefer more relevant and informative ads, provided that they would have to pay attention—one way or the other—to ads in exchange for the free content.[40]

Attention brokers compete. They compete first and foremost for revenue-streaming advertisers. Since advertisers seek attention, brokers compete secondly for attention payers (or capturers, depending on who are on the opposite side to advertisers). This competition may take pricing or non-pricing forms, before or after establishing an advertiser base. The endgame is to amass and hold captive of those attention sources, then channelling indirect network effects to attract advertisers.[41] Accordingly, a broker sets 'prices' for each side in a coordinated fashion, accounting for each side's demand elasticity and the magnitude of indirect network effects.[42]

This endgame raises concerns for excessive data collection to the detriment of captive consumer users.[43] The concerns include but are not limited to privacy

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[37] Evans (n 18) 777; Evans (n 27) 5 (describing the transactions costs arising from a direct attention-cash trade between an advertiser and a consumer).
[38] Evans (n18) 788 (highlighting the consumer surplus flowing from the broker-generated content, which could be in jeopardy if consumers withdraw from trading their attention as well as data).
[39] Evans (n 27) 7.
[40] Evans (n 18) 788 ('if they are going to be presented ads, they would presumably prefer more relevant ones, which requires data').
[41] Wu (n 4) 790–91 (describing Facebook's non-pricing, predation-like competitive strategy against Myspace on the attention-seeking front). See also, Evans (n 18) 777 (explaining the basic economics of attention platforms, which rationalizes the consumer-before-advertiser competitive strategy).
[42] Daniele Condorelli and Jorge Padilla, 'Harnessing Platform Envelopment in the Digital World' (2020) 16(2) Journal of Competition Law & Economics 143, 148.
[43] Estrada-Jiménez and others (n 31) 40 (asserting that the drive of data collection 'might naturally discourage the online actors from protecting user information against privacy attacks').

invasion;[44] they point to a wider sense of unfair trade, stemming from the treatment of behavioural data as to-be-appropriated capital.[45] First, from the users' perspective, the attention-for-free-service model has already set the data collection to a non-optional default.[46] On top of this is a 'value reinvestment cycle' of data collection: whatever benefits that a consumer user may gain from the improved content/service, they cannot internalize such benefits without making another contribution of data points.[47] Second, from the broker's perspective, the data points collected for a particular advertising operation are not necessarily one-use; there are economies of scale and scope that propel brokers to exploit. Scale-wise, the behavioural data collected from one user can be used to profile another for targeted advertising;[48] scope-wise, the data collected for targeted advertising may be used for providing another revenue-streaming service.[49]

Fair trade or not, behavioural data can be collected via two routes: directly from a user or indirectly from third parties, although the line between them is not clear-cut. This is discussed in the next section.

3. Two Routes of Data Collection

Efficient behavioural advertising requires scaled-up data collection.[50] This incentivizes attention brokers to collect data not only directly from users but also indirectly from other sources. It implies that attention brokers are aversive to impediments—such as consent requirements—from data subjects. As data and consumer protection laws are heightened, ravening data collectors need to adapt.

3.1. Dwindling of Third-Party Tracking

[44] To address such concerns, measures enhancing transparency and control by data subjects are commonly adopted. See Estrada-Jiménez and others (n 31) 38–39, 46 (listing seven potentially privacy-harming ways of data collection in targeted online advertising; appraising some of the existing tackling approaches).
[45] Arrieta-Ibarra and others (n 13) 39–40 (explaining the conceptual differences of treating data as capital versus data as labour).
[46] Economides and Lianos (n 19) 6–8 (observing that the 'zero price' banner of the attention-attracting content disguises the non-optionality of the actual 'data submission in exchange for the ostensibly free service' trade; asserting that this constitutes a market failure).
[47] For example, search engine users help improve a search engine by contributing data concerning their search queries and subsequent clicks. No doubt that these users benefit from the performance improvement. But they cannot enjoy such benefits without putting in another search query and so initiating another round of behavioural data contribution. Zuboff (n 9) 70 (illustrating this 'behavioural value reinvestment cycle').
[48] Peitz (n 15) 34.
[49] See n 113 and accompanying text.
[50] See nn 30, 48, and accompanying text.

Third-party tracking in behavioural advertising means the identification of a user and tracking of their behaviour across multiple first-party sources where user information is generated upon direct interactions. The tracking purpose is to draw a user profile as accurately as possible so that more relevant ads can be displayed when this user exchanges attention for content/service. It boils down to aggregating behavioural data indirectly from different first-party sources and linking it to a single user through the use of information storing and sharing mechanisms. For tracking on the web, cookies and social network plug-ins have been commonly used.[51]

Mobile-based tracking is slightly different from its web-based counterpart.[52] First, smartphones and other mobile devices alike generate location data, which greatly helps a tracker ascertain a device owner's real identity. Therefore, location data is eagerly sought after by many data brokers and advertisers.[53] Second, besides cross-website tracking on browsers, third-party tracking in mobile environments also takes the form of cross-app activity tracking. This is enabled by a mobile advertising ID and implemented through software development kits (S.D.K.s).[54] This kind of ID is the pseudonymous identity assigned by a mobile operating system to a device, referred to as the Identifier for Advertisers (IDFA) in iOS devices and the Google Advertising Identifier (GAID) in Android devices. It is pre-established and uniform, saving trackers the trouble of creating tracking IDs themselves.[55]

The main problem with third-party tracking is the abusive use to collect unnecessarily extensive data without users' knowledge, let alone consent. This has caused consumer backlash on a global scale, prompting stricter

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[51] Jonathan R Mayer and John C Mitchell, 'Third-Party Web Tracking: Policy and Technology' (2012 IEEE Symposium on Security and Privacy, San Francisco, May 2012) <https://doi.org/10.1109/SP.2012.47> accessed 12 April 2021, 413. See also, Viktoria Robertson, 'Excessive Data Collection: Privacy Considerations and Abuse of Dominance in the Era of Big Data' (2020) 57 Common Market Law Review 161, 162 (describing the nature of third-party data tracking); Estrada-Jiménez and others (n 31) 38.

[52] Reuben Binns and others, 'Third Party Tracking in the Mobile Ecosystem' (Proceedings of the 10th ACM Conference on Web Science, Amsterdam, 2018) <https://doi.org/10.1145/3201064.3201089> accessed 12 April 2021, 2 (observing that 'third party tracking via apps remains largely invisible to end-users', which contrasts the web, 'where millions of users make use of tracker protection tools').

[53] Stuart A Thompson and Charlie Warzel, 'Twelve Million Phones, One Dataset, Zero Privacy' *The New York Times* (19 December 2019) <https://www.nytimes.com/interactive/2019/12/19/opinion/location-tracking-cell-phone.html> accessed 12 April 2021 (describing location data as the 'holy grail' for advertisers). On data brokers, see WebFX Team, 'What Are Data Brokers – And What Is Your Data Worth? [Infographic]' (*WebFX*, 16 March 2020) <https://www.webfx.com/blog/internet/what-are-data-brokers-and-what-is-your-data-worth-infographic/> accessed 12 April 2021.

[54] Thompson and Warzel (n 53).

[55] Geradin, Katsifis and Karanikioti (n 29) 23.

regulations across jurisdictions.[56] The General Data Protection Regulation (GDPR) of the EU requires that information regarding the specific identity and purpose of a third-party tracker must be disclosed to a data subject;[57] also, profiling for targeted advertising purposes could give rise to 'significant effects' on a data subject, thus potentially infringing Article 22(1) of the GDPR.[58] The California Consumer Privacy Act (CCPA), entered into force in January 2020, provides a broad definition of protected personal information, which extends to 'unique personal identifiers' such as Internet cookies and the like.[59] New to the addition will be China's pending Personal Information Protection Law, which plans to subject the sharing of personal information with third parties to specific consent from the identified or identifiable person.[60]

Following this regulatory trend, business environments are also becoming increasingly hostile to third-party tracking: an increasing number of browsers are blocking third-party cookies by default and planning to phase them out entirely; besides, independent ad blocking services have long been popular among consumers. Regarding mobile tracking, Apple updated its mobile operating system (iOS) in 2021 to make each device's IDFA opt-in. This is expected to result in a much higher percentage of users disabling IDFA-based tracking.[61] Google and other mobile operating system providers are expected

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[56] Rebecca Stewart, 'Advertising and Social Media Face Fresh Trust Issues amid Global Crisis' *The Drum* (15 May 2020) <https://www.thedrum.com/news/2020/05/15/advertising-and-social-media-face-fresh-trust-issues-amid-global-crisis> accessed 12 April 2021; 'Companies Should Take California's New Data-Privacy Law Seriously' *The Economist* (18 December 2019) <https://www.economist.com/business/2019/12/18/companies-should-take-californias-new-data-privacy-law-seriously> accessed 12 April 2021; 'Governments Are Erecting Borders for Data' *The Economist* (20 February 2020) <https://www.economist.com/special-report/2020/02/20/governments-are-erecting-borders-for-data> accessed 12 April 2021.

[57] Art 14 of 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, and repealing Directive 95/46/EC (GDPR), OJ 2016 L 119/1.

[58] Article 29 Working Party, 'Guidelines on Automated individual decision-making and Profiling for the purposes of Regulation 2016/679' (WP251rev.01, as last revised and adopted on 6 February 2018), at 22.

[59] California Consumer Privacy Act of 2018 [1798.100 - 1798.199], 1798.140, (x).

[60] Art 24 of the Personal Information Protection Law (Draft) (中华人民共和国个人信息保护法(草案)), released on 21 October 2020, <https://www.dataguidance.com/sites/default/files/china_draft_personal_data_law.pdf> accessed 12 April 2021 (in Chinese). This draft is currently under review by the Standing Committee of the National People's Congress, China's national legislature.

[61] John Koetsier, 'IDFA Stay Of Execution: Apple Delays New iOS 14 Privacy Measures Until 2021' *Forbes* (3 September 2020) <https://www.forbes.com/sites/johnkoetsier/2020/09/03/idfa-stay-of-execution-apple-delays-new-ios-14-privacy-measures-until-2021/?sh=1d0a0d5d569f> accessed 12 April 2021. Recently, Google announced that 'once third-party cookies are phased out, we will not build alternate identifiers to track individuals as they browse across the web, nor will we use them in our products'. Notably, the announcement does not apply to first-party data or mobile-tracking environments. See David Temkin, 'Charting a Course towards a More Privacy-First

to follow suit.[62] In summary, third-party tracking, in its current form, is dwindling.[63] Advertisers and attention brokers are looking for alternative ways to sustain the data collection.

3.2. Growing Prominence of Within-Conglomerate Data Sharing

As third-party tracking becomes less feasible, behavioural data collectors are exploring other options. One that is coming to prominence is within-conglomerate data sharing/combination. It technically falls under the 'first-party route' category but with a strong conglomerate feature. Backdropping this development is that tech platforms have been building conglomerate 'walled gardens' around their core services, thereby raising user switching costs and reaping the benefits of incompatible platform competition. (This is discussed in Section 5.2.)

These 'walled gardens' help ensure a steady flow of attention as well as behavioural data. There, tracking will be practically frictionless if users are in an authenticated environment. Specifically, if a conglomerate offers a service conditionally upon user log-in, then a user will have opted in first-party tracking when choosing to access that service and other affiliated services thereon. In similar logic, an authenticated environment may revive third-party tracking. For example, when a Chrome browser user chooses to sign in to their Google Account while browsing, Chrome will technically be able to track that user anywhere on the web.[64] Likewise, when a user chooses to log in and access a third-party service through a Facebook plug-in, Facebook will be able to track the user on that third-party venue.[65]

Tracking in authenticated environments amounts to the combination of data sourced from different segments of a conglomerate and possibly from third parties. It is somewhat controversy-resistant because the authentication means users have opted in. However, questions may arise in particular situations regarding the validity of user consent. A user may have consented to being identifiable within individual services of a conglomerate but not

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Web' (*Google Ads,* 3 March 2021) <https://blog.google/products/ads-commerce/a-more-privacy-first-web/> accessed 12 April 2021.

[62] Allison Schiff, 'Google's Quiet Preparations For Apple's IDFA Change Offers Hints On The Future Of Its Own Mobile Ad ID' *AdExchange* (31 August 2020) <https://www.adexchanger.com/mobile/googles-quiet-preparations-for-apples-idfa-change-offers-hints-on-the-future-of-its-own-mobile-ad-id/> accessed 12 April 2021.

[63] To be clear, some forms of third-party tracking will persist—albeit less efficiently—as long as they are based on user opt-in. For example, in mobile contexts, a user may choose to keep the IDFA on their device traceable. In web environments, a user may choose to log into different first-party content sources via Facebook's plug-in; this would enable Facebook to track that user across different first-party sources.

[64] Geradin, Katsifis and Karanikioti (n 29) 15–16 (discussing the user-tracking implication of Google's move of merging Chrome log-in with Google Account in 2018).

[65] Geradin, Katsifis and Karanikioti (n 29) 11, 15.

necessarily across them.[66] Also, a user may be unaware or coerced when a platform uses authentication to revive third-party tracking. For such questionable situations to actualize, a catalyst would be the power imbalance between a dominant platform and its locked-in users (as discussed in Section 2.3.).

In a way, within-conglomerate data sharing raises problems that are fundamentally no different from those of third-party tracking. It is simply a toned-down version of the latter. If anything, it is more secure, as the tracking now falls under the first-party dome and fewer interferences may come from the infrastructure-like web browsers or mobile operating systems. [67] Additionally, it is more competition-proof, as vertically integrated first-party trackers get an opportunity to foreclose independent third-party trackers. One example is Google Chrome's decision to phase out third-party cookies.[68] This decision narrates the envelopment strategy used by conglomerate platforms to foreclose standalone incumbents in a platform service market.[69]

The upshot is that user data protection becomes particularly precarious vis-à-vis within-conglomerate data sharing. The precariousness is exemplified in the recent controversies surrounding WhatsApp's privacy policy updates. The updates informed users, rather confusingly, that (1) WhatsApp planned to share user metadata with its parent company Facebook and affiliated entities; (2) users would have to accept the new terms by February 8, 2021 (later delayed to May 15, 2021, due to backlash) or lose access to their accounts.[70] Admittedly, these policy updates as such entail no substantial changes to the existent, non-optional data sharing schemes from WhatsApp to Facebook; but

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[66] Such cross-service tracking (or automatic user matching across services) is technically feasible, as shown in the Commission's finding that, at the time of the 2014 Facebook/WhatsApp merger, 'it was already technically possible to automatically match users' profiles of different apps' of the same publisher but Facebook concealed this fact from the Commission. See Case M.8228 *Facebook/WhatsApp*, 17 May 2017, C(2017) 3192 final, recitals 80, 81.

[67] Geradin, Katsifis and Karanikioti (n 29) 41–42, 55–56 (highlighting that measures limiting third-party tracking, like Google's Privacy Sandbox initiative, keep intact first-party tracking where surveillance might be equally if not more pervasive).

[68] For a discussion on this decision's antitrust implications, see Geradin, Katsifis and Karanikioti (n 29) 43, 66.

[69] See n 114 and accompanying text.

[70] Amer Owaida, 'WhatsApp Updates Privacy Policy to Enable Sharing More Data with Facebook' (*WeLiveSecurity*, 7 January 2021) <https://www.welivesecurity.com/2021/01/07/whatsapp-updates-privacy-policy-share-user-data-facebook/> accessed 12 April 2021; Mike Isaac, 'WhatsApp Delays Privacy Changes Amid User Backlash' *The New York Times* (15 January 2021) <https://www.nytimes.com/2021/01/15/technology/whatsapp-privacy-changes-delayed.html> accessed 12 April 2021.

alarmingly, these schemes have been stealthily in place since 2016.[71] Also, these changes should be viewed from a long-term perspective as part of Facebook's plan-in-progress of integrating its affiliated social network and messaging services to explore more data monetization avenues.[72] There, captive users would be further deprived of choices against increasingly exploitative trading terms.

4. The Advent of Ex-Ante Regulation

Data protection authorities have acted against the privacy risks in within-conglomerate data combination practices, to the point of imposing 'no cross-service sharing of personal data' requirements upon dubious platforms.[73] Relatedly, the EU's upcoming DMA brings these practices into the competition law horizon: under the overarching objective to preserve market contestability, the DMA specifically prohibits gatekeeper-qualified platforms from cross-service data sharing unless specific choices were presented to and consent were given by the end-user.[74] It and the twin DSA are ex-ante measures in form and a blend of data protection and antitrust considerations in substance. This section seeks to situate into the competition law context the ex-ante DMA rule—Article 5(a)—governing data combination.

4.1. Ex-Ante and Ex-Post Approaches to Tackling a Harm

Two approaches are available for protecting users against exploitative data collection: ex-ante and ex-post, set apart by the time of intervention.[75] An ex-

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[71] Shira Ovide, 'The Truth About Your WhatsApp Data' *The New York Times* (13 January 2021) <https://www.nytimes.com/2021/01/13/technology/whatsapp-data.html> accessed 12 April 2021.

[72] Mike Isaac, 'Zuckerberg Plans to Integrate WhatsApp, Instagram and Facebook Messenger' *The New York Times* (25 January 2019) <https://www.nytimes.com/2019/01/25/technology/facebook-instagram-whatsapp-messenger.html> accessed 12 April 2021.

[73] At least two data protection actions have been taken against the post-merger Facebook-WhatsApp entity. See Press release by the Hamburg Commissioner of Data Protection and Freedom of Information, 'Higher Administrative Court confirms the prohibition of data sharing between WhatsApp and Facebook' (2 March 2018) <https://datenschutz-hamburg.de/assets/pdf/Press_Release_2018-03-02_Higher_Administrative_Court_Facebook.pdf> accessed 12 April 2021; Elizabeth Denham, 'Blog: A win for the data protection of UK consumers' (*Information Commissioner's Office*, 14 March 2018) <https://ico.org.uk/about-the-ico/news-and-events/news-and-blogs/2018/03/blog-a-win-for-the-data-protection-of-uk-consumers/> accessed 12 April 2021.

[74] Art 5(a) of the Proposal for a Regulation of the European Parliament and of the European Council on Contestable and Fair Markets in the Digital Sector (Digital Markets Act), 15 December 2020, COM(2020) 842 final.

[75] Brian Galle, 'In Praise of Ex Ante Regulation' (2015) 68(6) Vanderbilt Law Review 1715, 1723–24.

ante approach intervenes before a harm transpires. It sets a standard of due 'care', reducing the risk of that harm transpiring to a desired level; it then propels firms to meet that standard through behavioural monitoring and misbehaviour sanctions.[76] Meanwhile, an ex-post approach intervenes after a harm arises. It protects by enforcing remediation. The underlying presumption is that predicting the occurrence of a harm is too costly for a regulator, so market actors are allowed to freely behave within the boundaries of a pre-defined legal framework—which may include a general data protection law. Should that harm occur, it becomes the task of the ex-post regulator to enforce remediation and resolve disputes. To that end, the regulator needs to monitor the harm occurrence.[77]

A purely ex-ante regulatory measure does not concern itself with harm detection and resolution; it focuses exclusively on behavioural control. Meanwhile, A purely ex-post measure sets no standard of care; it works solely on post-harm remediation.[78] But this dichotomy is theoretical. In practice, the two are often used cooperatively for tackling a harm.[79] On the one hand, a firm that meets a certain ex-ante standard of due care might still be held somewhat liable ex-post in case of harm yielding.[80] On the other hand, no ex-post intervention stands entirely on its own. It is either coupled with certain ex-ante standards of care or at least based on a pre-existing legal framework that sets a standard akin to one set by ex-ante regulation.[81]

In competition law, merger control embodies the ex-ante approach, as it aims to anticipate whether a pending merger would significantly lessen competition—thus the harm of welfare-reducing market failure—and so warrants intervention. Enforcement against abuse of dominance and anticompetitive agreements is ex-post: an enforcer intervenes ex-post, by ascertaining the same harm with actual or presumptive evidence and devising

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[76] Misbehaviour sanctions mean 'always sanctioning negligent conduct (when a firm is monitored) rather than only sanctioning such conduct when an accident occurs'. See Robert Innes, 'Enforcement Costs, Optimal Sanctions, and the Choice between Ex-Post Liability and Ex-Ante Regulation' (2004) 24(1) International Review of Law and Economics 29, 30–31. See also, Steven Shavell, *Economic Analysis of Accident Law* (Harvard UP 1987) 277–82.

[77] Marcel Boyer and Donatella Porrini, 'Law versus Regulation: A Political Economy Model of Instrument Choice in Environmental Policy' in Anthony Heyes (ed), *The Law and Economics of the Environment* (Edward Elgar 2001) 250–53.

[78] Dilip Mookherjee and I P L Png, 'Monitoring Vis-a-Vis Investigation in Enforcement of Law' (1992) 82(3) American Economic Review 556, 556–57.

[79] Charles D Kolstad, Thomas S Ulen and Gary V Johnson, 'Ex Post Liability for Harm vs. Ex Ante Safety Regulation: Substitutes or Complements?' (1990) 80(4) American Economic Review 888, 888–89 (observing that '*ex ante* and *ex post* policies are very frequently used jointly' and explaining the underlying efficiencies).

[80] Innes (n 76) fn 4.

[81] Ex-post intervention in this pre-defined framework would be more enforcement cost-efficient than in a no-pre-defined-boundaries scenario, because 'it prompts firms to meet a given standard of care with less government monitoring effort'. See Innes (n 76) 30–31.

appropriate remedies. Notably, besides merger control, ex-ante antitrust intervention may take another, special form: regulatory measures set out to stimulate or mould competition in specific circumstances or sectors.[82] A rationale for such measures is that the specific circumstances or sectors yield competition problems that cannot be adequately addressed by generic antitrust rules and ex-post enforcement.[83]

4.2. Choosing between Ex-Ante and Ex-Post Intervention in an Antitrust Context

4.2.1. More Regulation versus Less Regulation

The strength of the ex-ante approach is minimizing harm occurrence by enforcing a uniform and mandatory standard of care.[84] But therein also lies its fragility: the standard would have to be set optimally—not higher or lower than the harm probability. Too high a standard would end up sanctioning firms that, albeit acting below standard, are unlikely to cause the harm at issue. Too low a standard would afford firms some possibility of inflicting the harm and yet remaining liability-free. Simply, an ex-ante measure risks both false positives and false negatives in standard designing.[85]

In contrast, the strength of the ex-post approach is neutralizing false-positive risks, as it intervenes upon detecting an incident of harm. But in doing so, it amplifies false-negative risks, for a sizeable number of harm incidents could have gone undetected and unresolved.[86] Besides, when operationalized, it might entail remedies at too late a time, making delayed justice denied justice.[87]

Their different strengths make them suitable for different regulatory needs. Overall, if ex-ante and ex-post measures were to be placed on a continuum of government regulation, ex-ante measures would generally fall closer to the

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[82] An example of this form is the measure by the Chinese central banking regulator to interconnect mobile payment services. See Xingyu Yan, 'Towards a More Competitive Mobile Payment Industry: Standardization and Beyond' (26 December 2020) Journal of Competition Law & Economics <https://doi.org/10.1093/joclec/nhaa029> accessed 12 April 2021, 3–4.
[83] Melamed (n 8) 20.
[84] Innes (n 76) 31.
[85] Galle (n 75) 1720, 1725–29. See also, Rob Frieden, 'Ex Ante Versus Ex Post Approaches to Network Neutrality: A Comparative Assessment' (2015) 30(2) Berkeley Technology Law Journal 1561, 1584; Jon D Hanson and Kyle D Logue, 'The Costs of Cigarettes: The Economic Case for Ex Post Incentive-Based Regulation' (1998) 107(5) Yale LJ 1163, 1268–70.
[86] Frieden (n 85) 1594.
[87] On this point, see, for example, Vikas Kathuria and Jure Globocnik, 'Exclusionary Conduct in Data-Driven Markets: Limitations of Data Sharing Remedy' (2020) 8(3) Journal of Antitrust Enforcement 511, 522–523 (explaining that the velocity of data could make mandatory data sharing inefficacious as an ex-post remedy for data-foreclosing dominance abuses).

'more regulation' end whereas ex-post measures closer to the 'less regulation' end.

4.2.2. To Mould versus to Reinvigorate Competition

In a market economy setting,[88] government regulation is justified where market self-regulation fails.[89] There, competition is a necessary but insufficient condition for a market's ability to self-regulate. Without competition, the market will certainly not be able to self-regulate, thus inviting government efforts to reinvigorate competition. Meanwhile, having competition present does not necessarily entail proper market self-regulating: there could be cases of 'competition overdose', where ill-devised market design makes disorderly competitive forces cause welfare-reducing harms.[90]

This shapes regulatory choices regarding the kind and the extent of market intervention. Specifically, it guides the cooperative use of ex-ante and -post measures in two scenarios: (1) where market self-regulation is failing because competition is being misdirected by poor market design; (2) where market self-regulation is failing because competition is being suppressed by market power. In the first scenario, the solution is more efficient and just design. In the second, the imperative is antitrust. Many privacy-invasive harms may have more to do with the first scenario than the second, in the sense that without carefully constructed incentivization rules, an as-efficient competitor could be just as privacy-invasive as a dominant incumbent.[91]

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[88] Some settings are naturally more suitable for government regulation, because therein competition cannot effectively flow or because they are to achieve non-economic objectives for which competition is ill-suited. For example, public goods are non-excludable and non-rivalrous by nature and thus inhospitable to competition; this invites more direct government control. See Maurice E Stucke and Ariel Ezrachi, *Competition Overdose: How Free Market Mythology Transformed Us from Citizen Kings to Market Servants* (Harper Business 2020) 122–23. See also, Melamed (n 8) 19.

[89] David Parker and Colin Kirkpatrick, 'The Economic Impact of Regulatory Policy: A Literature Review of Quantitative Evidence' (OECD Expert Paper No 3, August 2012) <https://www.oecd.org/governance/regulatory-policy/3_Kirkpatrick%20Parker%20web.pdf> accessed 12 April 2021, 9 ('regulations are indispensable to the operation of effective economies and societies by underpinning market rules (e.g. law of contract) and protecting property rights and the rights of citizens').

[90] Stucke and Ezrachi (n 88) 14, 48, 72, 95 (describing four scenarios of competition overdose). See also, Roth (n 32) 32 ('the "magic" of the market doesn't happen by magic; many marketplaces fail to work well because of poor design').

[91] Christopher Kuner and others, 'When Two Worlds Collide: The Interface between Competition Law and Data Protection' (2014) 4(4) International Data Privacy Law 247, 247–48 (highlighting that data exploitation by monopolies in winner-takes-all markets borders on 'systemic market failures' in the sense that an as-efficient competitor would not necessarily make the situation any better). See also, Giuseppe Colangelo and Mariateresa Maggiolino, 'Data Accumulation and the Privacy–Antitrust Interface: Insights from the Facebook Case' (2018) 8(3) International Data Privacy Law 224, 234 ('if network effects disincentivize digital

There is a dynamic aspect to the second scenario: market competition may be worsening or recovering over time. So it has been suggested that the regulator should not choose 'the full array of ex ante regulatory safeguards' when a refined amount of government regulation could reinvigorate competition.[92] Particularly, an originally heavily regulated market should be prescribed with 'a deregulatory "glide path"'—which suggests adopting ex-post measures—as competition gains momentum.[93] On the other hand, where competition is deteriorating, more—but well-thought-out—regulation would be needed, implying calibrated ex-ante measures.[94] The regulatory aim is to restore competition, not to substitute competition unless it is no longer restorable.

There is a common argument for more regulation—and so ex-ante regulation—of tech platform markets: market competition cannot be sufficiently robust, so market self-regulation is unattainable and welfare-reducing harms imminent.[95] Some caveats should be attached to this argument: First, it supposes that the problem is indeed a lack of competition rather than inefficient or unjust market design. Second, the alleged harms might be insufficiently substantiated by empirical evidence.[96] Third, it could easily neglect the dynamic case of competition being recovering or at least recoverable.[97] Thus, this argument should be leveraged carefully, as ex-ante measures are well underway.

4.3. Article 5(a) of the DMA and Beyond

4.3.1. Substance

Article 5(a) takes on within-conglomerate data sharing. Concerning itself with 'personal data' and requiring 'choice' and 'consent', this provision confronts the power imbalance between a gatekeeper platform and its locked-in consumer users. It is to be applied along with Article 3 of the DMA, which lays

platforms from producing privacy-friendly services, then economic regulation, rather than antitrust law, should intervene'); Estrada-Jiménez and others (n 31) 38–40.

[92] Frieden (n 85) 1563.

[93] Frieden (n 85) 1569.

[94] For an illustration of a causal chain model for designing well-thought-of regulations, see Parker and Kirkpatrick (n 89) 12–13.

[95] Frieden (n 85) 1563, 1570.

[96] Nicolas Petit, *Big Tech and the Digital Economy: The Moligopoly Scenario* (OUP 2020) 26 (observing an 'is-ought' problem in neo-structuralist thinking, which 'leaves neo-structuralism prone to faith-based "big is bad" claims and a disinterest for empirically observable market facts'). See also, D Daniel Sokol, 'Antitrust's "Curse of Bigness" Problem' (2020) 118(6) Michigan Law Review 1259, 1264–65 (objecting to 'broad-brushed critiques' on tech platform monopolization for their lack of case-specific economics-based analyses); Melamed (n 8) 11.

[97] Frieden (n 85) 1611 (asserting that 'the nature of ex ante regulation should change on an incremental basis as market conditions make self-regulation more plausible').

down the criteria for qualifying a gatekeeper platform. Together they form an ex-ante behavioural standard mandatory to all gatekeepers. Like any other ex-ante measure, the success of this standard depends on how well it would correlate with the probabilities of harm occurring in actual cases.[98] One thing is sure: if adopted, it would greatly relieve the 'privacy policy tying' problem, whereby a dominant platform makes the provision of a core service conditional upon a user's consent to cross-service data sharing.[99] Such tying schemes by a gatekeeper would likely be declared illegal under Article 5(a) for they offered users no specific choice and obtained no valid consent.

This provision blends considerations of data protection and competition preservation, in that it comprehensively accounts for the exploitative and exclusionary harms flowing from the gatekeeper-user power imbalance: The Commission explains on page 4 of the DMA proposal that 'mandatory opt-out for data combination across core platform services supplements the existing level of protection under the GDPR'. In Recital 36 on page 22, it expresses the antitrust concern that gatekeepers might use within-conglomerate data sharing to foreclose rivals and raise entry barriers.

This blend echoes a growing realization that fragmented approaches to tackling big tech data exploitation are ineffectual.[100] Backstopping this realization is the linked but separate rationales of GDPR protection and Article 102 TFEU protection against data exploitation. On the one hand, they are linked for their complementarity. The GDPR empowers users to exercise their choices; in that sense, it helps improve the design of a market wherein competition flows.[101] Article 102 and other competition rules alike prevent competition from being arrested by market power, thus ensuring that users would have meaningful choices to begin with.[102] On the other hand, they have separate standpoints. The GDPR approaches data exploitative harms from a fundamental rights perspective, whereas Article 102 from a weighed welfare perspective.[103] Article 102 tackles data exploitative harms that are attributable to market power; these harms overlap only partly with the

[98] See n 85 and accompanying text.
[99] Condorelli and Padilla (n 42) 145.
[100] Geradin, Katsifis and Karanikioti (n 29) 36–37 (observing that European data protection and competition regulators are shifting away from a fragmented approach, in reaction to the growing power of big tech).
[101] This is why consumer and data protection laws are needed: to lay down market-design rules that prevent a vicious competitive cycle to the detriment of user rights. See Kuner and others (n 91).
[102] Inge Graef, Damian Clifford and Peggy Valcke, 'Fairness and Enforcement: Bridging Competition, Data Protection, and Consumer Law' (2018) 8(3) International Data Privacy Law 200, 203 ('Competition law thus aims to ensure the availability of choice whereas data protection and consumer protection law aim at effectively empowering individuals exercise such a choice.').
[103] Economides and Lianos (n 19) 4, 5, 25.

fundamental rights-infringing harms tackled by the GDPR.[104] The harms addressed by Article 5(a) fall under the overlapping section.

4.3.2. Beyond

Article 5(a) is commendable for addressing ex-ante the emergent data combination practices when they have shown the capability to cause exploitative harms and law enforcers have struggled to wield the appropriate tackling tools. The German Competition Authority (GCA, Bundeskartellamt) made the painstaking effort of prosecuting Facebook's data combination practice as a simultaneously exploitative and exclusionary abuse of dominance.[105] The outcome includes a rather far-fetched theory of harm on the exclusionary effects of Facebook's conduct.[106] As has been suggested, a practical reason for the GCA to prosecute Facebook's unfair commercial practices under antitrust law—rather than the seemingly more suited unfair-competition law—is because the latter excludes public enforcement.[107] Besides, even if antitrust law were the most appropriate avenue for ex-post intervention, questions would remain as to whether ex-post remediation would outperform pre-emptive action, considering the fundamental rights at risk.[108]

This provision should be a start, rather than a finish to regulating data combination practices. As an ex-ante standard of data protection (in

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[104] Ioannis Lianos, 'Polycentric Competition Law' SSRN Scholarly Paper (Social Science Research Network, 1 September 2018) <https://papers.ssrn.com/abstract=3257296> accessed 12 April 2021, 43 (highlighting the antitrust possibility to prosecute firm conduct without it necessarily violating data protection rules); Colangelo and Maggiolino (n 91) 230 (arguing based on the Facebook case that an exploitative data combination practice could escape data protection law and still be caught under competition law for its unfairness); Eugene Kimmelman, Harold Feld and Agustín Rossi, 'The Limits of Antitrust in Privacy Protection' (2018) 8(3) International Data Privacy Law 270, 272–73 (emphasizing, based on historical evidence, the value of separately enforceable privacy regulation); Graef, Clifford and Valcke (n 102) 206 (highlighting that the GDPR does not condition data protection obligations upon the market position of a firm; it adopts a risk-based approach instead).

[105] The GCA's reasoning, in a nutshell, is that Facebook used its dominance to impose unfair trading conditions upon consumer users to lock them in, ultimately to exploit their data and foreclose rivals; the unfairness stems from that those conditions violate the principles of data protection law. See Bundeskartellamt, 'Administrative Proceedings - Decision under Section 32(1) German Competition Act (GWB)' (6th Decision Division, B6-22/16, 2019) <https://www.bundeskartellamt.de/SharedDocs/Entscheidung/EN/Entscheidungen/Missbrauchsaufsicht/2019/B6-22-16.pdf?__blob=publicationFile&v=5> paras 524, 573, 871, 876, 885.

[106] Colangelo and Maggiolino (n 91) 229.

[107] Colangelo and Maggiolino (n 91) 232.

[108] The idea is that the available ex-post remedies could be too limited magnitude-wise to deter infringements and to compensate harms if fundamental rights were at risk; therefore earlier intervention is more desirable. See Steven Shavell, 'The Optimal Structure of Law Enforcement' (1993) 36(1) The Journal of Law & Economics 255, 261–62.

association with Article 3), it does not cover the instances of non-gatekeepers endangering users' privacy and other fundamental rights. Therefore, ex-post protection remains essential, at least against non-gatekeepers. This requires the application of data protection (and consumer protection) rules and to a lesser extent, antitrust rules on exploitative abuse of dominance.[109]

Remarkably, Article 5(a) is also intended as an ex-ante standard for competition preservation. To that end, it may serve either as a step towards better market design in which competition could flow or as a proactive measure to free competition from the arrest of market power, depending on the specific circumstances it will be applied to. Either way, the mandate of competition preservation calls for more complementary measures that go beyond a requirement of user consent and a prohibition of conduct that prima facie undermines rivals. For starters, a closer look should be taken at how—if at all—the gatekeeper candidates compete. After all, what is to be preserved is competition instead of competitors,[110] and competition may not be taking the well-known static forms.[111] This is discussed in the next section.

5. Ecosystems Competition

'Walled gardens' may merit serious concerns for user exploitation, but this does not necessarily invalidate the possibility of competition among them. Measures addressing those exploitation concerns would have to account for the at-stake competition. The reason is not so much that preserving competition prevails over resolving exploitation in an inevitable trade-off; rather, it is that in certain cases exploitation might be better resolved through competition preservation.

5.1. User Base Leveraging for Platform Growth

The 'walled gardens' of tech conglomerates centre around one or more core platform services. This platform attribute dictates the thickening of the two sides that need to be matched.[112] An attention broker matches an advertiser with an attention payer (Figures 1 and 2); an ad network operator matches an advertiser with an attention capturer (Figure 3). For a better success rate of matchmaking, a platform needs to build a large enough user base on each side.

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[109] Kimmelman, Feld and Rossi (n 104) 271 ('Non-dominant companies that fall out of the scope of most antitrust scrutiny can harm an individual as much as dominant players').
[110] More specifically, antitrust protects as-efficient competitors rather than less efficient ones. See Xingyu Yan and Hans Vedder, 'Minimum Efficient Scale: Towards a More Coherent Understanding of Special Responsibility and Competition on the Merits under Article 102 TFEU' (2020) SSRN Electronic Journal <https://doi.org/10.2139/ssrn.3637995> accessed 12 April 2021, 25–28 (critically describing the as-efficient-competitor rationale).
[111] See n 139 and accompanying text.
[112] See n 32 and accompanying texts.

This thickness goal is achievable through user base leveraging. Different tech platforms may be based in different fields of the digital economy, but demand- and supply-side economies of scope commonly exist between the provision of one platform service and that of another. Demand-side scope economies manifest as service complementarity while supply-side ones boil down to user data as a common input.[113]

Therefore, user base leveraging is a sensical way for an established platform to venture into a new market and gain a foothold there. This points to a competition strategy characterized as 'platform envelopment', where bundling is a likely successful way of market entry.[114] As this strategy becomes popular, clinging to a non-integrated model would become increasingly disadvantageous for a platform—unless service differentiation sets it apart with a competitive edge.[115] Accordingly, firms are motivated to build conglomerate 'walled gardens' to neutralize entry threats.[116]

5.2. The Conglomeration Logic: Defence and Offence

5.2.1. Network Effects

The platform attribute entails direct and indirect network effects, which can also be referred to as 'demand-side economies of scale'.[117] As the user base of a platform expands, the value of the platform service (to users on the same or the other side) increases. Accordingly, the market demand for a given platform service is—within a certain period—an upward-sloping curve, as opposed to a linear downward-sloping one in the standard monopoly model. This implies that when the demand curve is upward-sloping, it would be socially inefficient to have a multiplicity of suppliers.[118]

On that basis, suppose a dominated platform market. There, the incumbent would have to balance between exploiting its market power and sustaining the demand increase. This trade-off exists because the exploitation requires

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[113] P Alexiadis and Alexandre de Streel, 'Designing an EU Intervention Standard for Digital Platforms' (2020) SSRN Electronic Journal <https://doi.org/10.2139/ssrn.3544694> accessed 12 April 2021, 23 (explaining that different digital markets could be connected either on the input- or output-side or both). See also, Condorelli and Padilla (n 42) 144.

[114] 'Platform envelopment' is described as an entry path alternative to Schumpeterian innovation into platform markets that typically feature strong network effects and high switching costs. See Thomas Eisenmann, Geoffrey Parker and Marshall Van Alstyne, 'Platform Envelopment' (2011) 32(12) Strategic Management Journal 1270, 1270–71.

[115] Alexiadis and de Streel (n 113) 6–7, 23–25, 29–31 (emphasizing the particular relevance of 'conglomerate market power' to antitrust in digital platform markets).

[116] Petit (n 96) 60 (finding empirically that certain big tech firms face less competitive threats than their peers for having established their own 'economic moats').

[117] Eisenmann, Parker and Van Alstyne (n 114) 1273.

[118] Petit (n 96) 73, 172, 177.

raising prices (in monetary or other forms) of the platform service but the continued demand increase is hinged on relatively low prices.[119] Accordingly, when the demand curve is still upward-going, a too significant price increase might cause users to flee to competing platforms, triggering a negative feedback loop towards platform collapse.

5.2.2. Switching Costs, Competitive Defence, and Offence

So network effects are indeterminate and may work for or against a platform. This introduces an additional element needed for platforms to self-perpetuate (ie to monopolize): high switching costs.[120] The presence of switching costs does not automatically weaken competition or welfare, [121] but it does fundamentally shape the competitive dynamics. In that shaping, it is linked to two others condition sets: (1) whether platforms compete on a compatible or incompatible basis; (2) whether users on a platform practice single- or multi-homing.

First, the presence of (significant) switching costs sets competition to an incompatible mode. [122] The incompatibility inhibits positive network externalities from flowing at the wider, inter-platform level. It nudges platforms towards competing for a given user's needs over time, rather than their needs at a particular point in time. In other words, in an incompatible mode, platforms compete 'for' instead of 'in' the market.[123]

Regarding the second condition set: incompatible competition drives platforms to adopt closed ecosystems that lock in single-homing users. Most platform markets feature multi-homing on at least one side, while the other side may or may not be single-homing. [124] While incompatibility straightforwardly captures single-homing, its interaction with multi-homing is more nuanced. First, incompatibility does not automatically disable multi-homing; rather, it may prompt multi-homing on one side if that side values the

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[119] Petit (n 96) 78–79.
[120] Michael L Katz and Carl Shapiro, 'Systems Competition and Network Effects' (1994) 8(2) The Journal of Economic Perspectives 93, 107.
[121] Paul Klemperer, 'Markets with Consumer Switching Costs' (1987) 102(2) The Quarterly Journal of Economics 375, 391 (finding that 'switching costs in a mature market lead to monopoly rents, but that these rents induce greater competition in the early stages of the market's development'); Tom Bjorkroth, 'Loyal or Locked-in--And Why Should We Care' (2014) 10(1) Journal of Competition Law & Economics 47, 56–59.
[122] Joseph Farrell and Paul Klemperer, 'Coordination and Lock-In: Competition with Switching Costs and Network Effects' in Mark Armstrong and Robert Porter (eds), *Handbook of Industrial Organization* (vol 3, Elsevier/North Holland 2007) 2005, 2055.
[123] ibid 1967, 1970.
[124] David S Evans, 'Some Empirical Aspects of Multi-Sided Platform Industries' (2003) 2(3) Review of Network Economics 191, 198–99.

inter-platform network benefits more than the costs to multi-home.[125] Specifically, when an incompatible platform market features one side practicing single-homing, the opposite side—if it wants to reach the maximum amount of those single-homing users—would be motivated to multi-home. Moreover, while multi-homing offers a way to access the greater network benefits stunted by incompatibility, it comes with a price: those multi-homers would have to internalize the extra costs of multi-homing compared to single-homing, which could ultimately be social welfare-reducing.[126] Such extra costs include, for example, the registration and membership fees paid to multiple platforms. Last, multi-homers are not immune to the risk of becoming exploitable captives.[127] This risk is imminent if switching costs are high.

Concisely, (high) switching costs set the competition mode to incompatibility. This, coupled with network effects, helps incumbent platforms to entrench their market power. It may or may not undermine consumer welfare, depending on the trade-off between platform profit gains and user surplus losses resulted from the incompatibility in specific contexts.[128] In any event, it is rational for an incumbent platform to build conglomerate ecosystems around its core services, as this raises barriers to keep its user base captive and standalone entrants at bay.[129] This is the competitive defence logic.

Besides defence, conglomeration also serves to offend in tech platform markets. For an intended entrant, it would likely be inefficient to enter directly into a platform market featuring network effects and an incumbent.[130] Indirect entry would be more promising. The technological discontinuity prevalent in digital information industries offers rich opportunities to find new demand curves through innovation and differentiation.[131] The intended entrant could

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[125] Toker Doganoglu and Julian Wright, 'Multihoming and Compatibility' (2006) 24(1) International Journal of Industrial Organization 45, 46, 61–62.

[126] ibid 46, 57, 64 (suggesting that, although multi-homing compensates the inefficiency of incompatibility, it generates costs internalized by the multi-homers; thus incompatibility may be more socially costly than compatibility).

[127] Doganoglu and Wright (n 125) 47 ('The fact that some consumers buy both products also means that consumer expectations are less responsive to price changes').

[128] Doganoglu and Wright (n 125) 63–64 (highlighting the desirability of compatibility when incompatibility is efficient for firms—because of customer multihoming—but inefficient for the society); María Fernanda Viecens, 'Compatibility with Firm Dominance' (2011) 10(4) Review of Network Economics, Article 4, 12, 17 (identifying a case of socially costly compatibility: compatibility could undermine product differentiation that is valuable to consumers, causing the consumer benefits generated by compatibility underwhelming while the loss of industry profits significant).

[129] Eisenmann, Parker and Van Alstyne (n 114) 1274–75 (describing the same ecosystem-building strategy from an 'offence' rather than 'defence' perspective: envelopment as a viable approach to challenge an established platform).

[130] Petit (n 96) 161–62, 165–66 (describing two entry game models: the defender is an incumbent big tech firm in both models while the offender is a big tech firm and non-big tech respectively in each model).

[131] Petit (n 96) 146, 156–57.

gain a foothold and market power in these 'unclaimed territories' first, and then leverage the market power to challenge an incumbent in another market when technological discontinuity makes the leveraging possible.

5.3. Dynamic Competition Hinged on Static Market Power

Following this conglomeration logic, behavioural advertising can be viewed as a cornerstone to an ecosystem architecture that serves for big tech platforms to defend themselves and offend other platforms. This makes efficiency sense: demand-side scale economies exist (at least temporally) on account of network effects;[132] supply-side economies of scale and scope are present in relation to data.[133]

Nonetheless, this architecture entails internal frictions: data is generated locally so a vastly decentralized system is needed for collection; meanwhile, a centralized system is needed for monetization via brokerage. The implication is that an ecosystem's development opportunities could be rather uncertain.[134] This generates competitive pressure, more than a decentralized market structure does. In other words, dynamic competition displaces static competition at the centre stage in data-intensive tech industries.[135]

That being said, the lack of static competition remains a valid concern, pointing to user exploitation resulted from unequal bargaining power. As described in Section 5.2.2., ecosystems tend to lock in users. Therefore, much as dynamic competition among ecosystems may deliver efficiency and welfare gains, in certain circumstances—such as when personal data is at stake—questions could arise as to whether these gains are worthy or justified on a distributive ground.[136] Besides, a practical argument could be made that addressing such distributive issues would reinforce in the long run the efficiency and welfare

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[132] See n 117 and accompanying text.

[133] See nn 48, 113, and accompanying text.

[134] Nicolas Petit and David J Teece, 'Taking Ecosystems Competition Seriously in the Digital Economy: A (Preliminary) Dynamic Competition/Capabilities Perspective' (2020) SSRN Electronic Journal <https://doi.org/10.2139/ssrn.3745453> accessed 12 April 2021, 6.

[135] ibid 3 ('In digital industries, the rewards to dynamic capabilities are higher… and the penalties for weak dynamic capabilities are severe.'). For an illustration of the competitive interplays among five US tech giants, see Bowdeya Tweh and Katherine Riley, 'Google, Facebook, Amazon, Apple and Microsoft. Call Them Tech Frenemies for Life' *The Wall Street Journal* (1 April 2021) <https://www.wsj.com/articles/tech-giants-cooperate-while-competing-frenemies-for-life-11617293819> accessed 12 April 2021.

[136] This is analogous to a discussion on whether anticompetitive effects within a certain market can be justified by out-of-market efficiencies. See, for example, Francesco Ducci, 'Out-Of-Market Efficiencies, Two-Sided Platforms, and Consumer Welfare: A Legal and Economic Analysis' (2016) 12(3) Journal of Competition Law & Economics 591, 602 (arguing that when assessing pro- and anti-competitive effects, 'taking into account only the relevant market and not another is not in itself a neutral judgment from a consumer welfare perspective').

gains promised by ecosystems dynamic competition.[137] Put simply, to appreciate the presence of dynamic competition does not necessarily mean to overlook the exploitative harms stemming from static market power. Also, considering that dynamic competition is hinged on static market power, in particular cases applying pressure to that market power could be a way to enhance dynamic competition.[138]

Therefore, regarding the platform-user power imbalance and the ensued data exploitation problem, the question is not whether to intervene but how. The (ex-post) enforcement of generic antitrust rules falls short for this task because those rules are not methodologically well-poised to account for dynamic competition.[139] Yet, it would be just as wanting to cancel antitrust efforts altogether since dynamic competition and static market power are inextricably linked. This calls for a reorientation from generic ex-post antitrust enforcement to the more fine-tuned application of ex-ante antitrust measures.

5.4. Another look at Article 5(a)

As the discussions above suggest, a gatekeeper platform is likely in competition. This means there is credibility in viewing Article 5(a) as a step towards better market design that accommodates competition.[140] It also means that complementary measures would be desirable for stimulating competition. On this, much is yet to be done. Pivoting everything on user consent alone could paralyze data collection operations altogether. The result would be economies of scope and scale in data being stunted.[141] These efficiency losses would in turn be passed on to consumer users, who rely on the attention brokerage model to conduct otherwise too costly transactions.[142] Therefore, the welfare benefits of intermediated transactions should be duly accounted for, besides users' data-related fundamental rights.

To be clear, this is not to prioritize welfare considerations over fundamental rights, since economic efficiencies promised by competition are not necessarily 'an outcome that is good, fair or just—for consumers, society, or

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[137] Ignacio Cofone, 'The Dynamic Effect of Information Privacy Law' (2017) 18(2) Minnesota Journal of Law, Science & Technology 517, 531, 534, 535 (explaining from three aspects why better data protection helps sustain long-run data monetization: limiting positive spillovers of information production, mitigating 'the increased cost of protecting one's personal information', and compensating users' 'expected privacy costs').

[138] Petit (n 96) 187 (arguing that '[a]ntitrust remedies should be introduced to promote uncertainty in big tech firms' monopoly markets when it has disappeared as a result of bad conduct and structural market failures').

[139] J G Sidak and D J Teece, 'Dynamic Competition in Antitrust Law' (2009) 5(4) Journal of Competition Law and Economics 581, 597–98, 601–02.

[140] See the para situating nn 110, 111.

[141] Michal S Gal and Oshrit Aviv, 'The Competitive Effects of the GDPR' (2020) 16(3) Journal of Competition Law & Economics 349, 380–82.

[142] See n 37 and accompanying text.

even for other competitors'.[143] In fact, non-economic considerations are often why government regulation, or at least better market design, is needed.[144] Nonetheless, in an ex-ante framework, it is worth exploring how those welfare benefits could be enhanced through measures that help mitigate the power imbalance and sustain dynamic competition.

6. Using Ex-Ante Measures to Foster Competitive Pressure

This section points to two directions for devising regulatory measures following an ex-ante rule such as Article 5(a) of the DMA. The aim is to stimulate competition towards delivering better brokerage services without jeopardizing user privacy or other fundamental rights.[145] Since data collectors often compete dynamically on the one hand while enjoying structural dominance on the other, the key is to introduce, through ex-ante measures, 'forces of disequilibrium'[146] in those stabilized, dominated markets. Instead of achieving structural decentralization, the measures are aimed at channelling competitive pressure in the form of potential rivals and more empowered users.[147]

6.1. Partial Ecosystems Interoperability: Behavioural Data Portability and More

As described in Section 2.1., data combination practices are geared towards profiling and targeting, then to the endgame of value derivation. Multiple avenues lead to this endgame, including—but not necessarily limited to—attention brokerage, perfect price discrimination, and tapping the economies of scope in data. The core platform services listed on page 2 of the DMA proposal spread across all three avenues. Accordingly, the proscriptive Article 5(a) applies not only to gatekeepers that broker attention (such as Facebook and Google) but also to gatekeepers that collect data whilst charging consumer users a monetary price for platform services.

Ex-ante antitrust measures would have to recognize ecosystems competition. An explorable direction is to foster partial ecosystems interoperability. The aim is to reduce user switching costs, thereby undermining the power imbalance sourced from users being locked in. Critically, however, the interoperability should be promoted at a limited level; this is because

[143] Stucke and Ezrachi (n 88) 123.
[144] See n 88 and accompanying text.
[145] Gal and Aviv (n 141) 386 (arguing 'the fact that more firms hold more or better personal information does not automatically imply harm to well-being'; instead, it may increase well-being through competition 'over data-based advantages').
[146] Sidak and Teece (n 139) 603.
[147] Petit (n 96) 187 (repositioning the main function of antitrust in digital markets).

ecosystems still compete dynamically, and much of that competition hinges on heterogeneity.[148] In other words, interoperability measures would be desirable in certain cases, as it yields more difficulty for established ecosystem operators to trap users in their core/dominant service segments. They are supposed to incentivize these operators to develop additional segments to the existing ecosystems.

In the case of attention brokerage, interoperability is achievable through behavioural data portability.[149] The GDPR has taken a progressive stance by recognizing in Article 20 a right to port personal data. Nonetheless, this GDPR right is essentially from a perspective of fundamental rights protection rather than economic regulation. Besides, the GDPR does not specify the scope of portable data or the upheld extent of portability.[150] More calibrated measures are needed to enable portability in specific cases for antitrust purposes.

The broad-brushed argument that portability is socially costly (for disincentivizing incumbent firms from competition and innovation) should be considered critically. After all, access to user behavioural data is non-rivalrous. When a user decides to port their behavioural data from one platform to another, it is a copy of the data to be ported; what the first platform will lose is the exclusiveness of this data source and the continuity of the data flow.[151] Presuming that this user single-homes, then the first platform could still 'win' them back by mobilizing its ecosystem towards dynamic competition, which means uncovering new demand curves through innovation and tapping into existing inelastic demands through product differentiation.

In cases of data monetization avenues other than attention brokerage, behavioural data portability is one way to interoperability. Another possible way is standardization. There is an ongoing regulatory project exemplifying this: the Chinese central financial regulator is implementing a plan to standardize mobile payment services. The aim is two-fold: to foster compatible competition in a duopoly and to neutralize systemic risks from the proliferating fintech industry.[152] The competition-fostering logic lies in that mobile payments platforms are building fintech ecosystems; there, mobile payments services generate limited revenue but are strategically vital for

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[148] Sidak and Teece (n 139) 608–10.

[149] Notably, where consumer users are encompassed in positive network externalities, portability alone would be insufficient to induce interoperability; but this does not apply to attention brokerage. See Jan Krämer, 'Personal Data Portability in The Platform Economy: Economic Implications And Policy Recommendations' (25 November 2020) Journal of Competition Law & Economics <https://doi.org/10.1093/joclec/nhaa030> accessed 12 April 2021, 12.

[150] ibid 2.

[151] Shota Ichihashi, 'Natural Monopoly for Data Intermediaries' (2019) SSRN Electronic Journal <https://doi.org/10.2139/ssrn.3310410> accessed 12 April 2021, 13–14.

[152] Yan (n 82) 16, 32.

directing users to other services such as online lending, insurance, and asset management.[153] So standardizing mobile payments could undermine market power and incentivize fintech operators to compete in improving other within-ecosystem services.

6.2. Enhancing Data-Analytics Innovation: Data as Labour

6.2.1. Two Stages of Data Competition

Access to data is non-rivalrous; a consumer user bears no opportunity costs in sharing a dataset of theirs to more than one firm. Thus, in a hypothetical situation where the sharing is burden-free (eg no privacy risks or required efforts on the margin), the user would be willing to share that dataset with just any data collector for an above-zero economic gain.[154] Consequently, all data-collecting firms would possess the same dataset, which is input for data-monetization output such as the brokerage service offered to advertisers. This input homogeneity would force these firms into intense competition on the output front; there, they would seek to make their output irreplaceable for potential buyers, so as to gain a competitive edge and avoid the vortex of Bertrand-style price competition.[155]

In other words, data-collecting firms seek product differentiation. They do this at two stages: data collection and processing. At the collection stage, product differentiation dictates that the input data be as exclusive as possible.[156] Accordingly, the willingness of a collector to 'pay' a consumer user for a dataset depends on how exclusively this dataset is being supplied. Meanwhile, at the data processing stage, product differentiation necessitates competition and innovation, meaning that a firm is driven to continuously improve its analytics capabilities to deliver outstanding output.[157]

Behavioural data has a feature of velocity:[158] it comes in a continuous flow and there is always fresher data available as long as a user stays active. Therefore, firms will be incentivized to engage in exclusive dealing with data-supplying users and subsequently hoarding such data, just to gain a competitive edge at

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[153] Yan (n 82) 27; n 21.

[154] Of course, data sharing in real-life situations are far from being burden-free: exercising each sharing is certainly not effortless and, depending on the dataset at hand, privacy could be increasingly vulnerable with each additional sharing. Nonetheless, reinforced privacy rules and better data management tools can help reduce those transactions costs. See Krämer (n 149) 7–8, 29.

[155] Yiquan Gu, Leonardo Madio and Carlo Reggiani, 'Data Brokers Co-Opetition' (2018) SSRN Electronic Journal <https://doi.org/10.2139/ssrn.3308384> accessed 12 April 2021, 3–4.

[156] Ichihashi (n 151) 13–14.

[157] Krämer (n 149) 8.

[158] Michal S Gal and Daniel L Rubinfeld, 'Data Standardization' (2019) 94(4) New York University Law Review 737, 744.

the data collection stage. The problem is that this conduct pattern nullifies the non-rivalrousness of data and thus could be socially inefficient.[159] This provides a welfare-based justification for the right to data portability: it neutralizes the risk of anticompetitive input foreclosure and lowers barriers to entry. If data portability were effectively enforced, firms would be forced to work harder to differentiate themselves at the data processing stage. Namely, as input data becomes more widely available, competition will make data-collecting firms increasingly focused on improving the efficiency and innovativeness of their data analytics.[160] This would not be an unhealthy development.

6.2.2. Shifting the Paradigm for Efficiency and Appropriability

To support this development (of improved data analytics), the current data-as-capital paradigm is inadequate. In this paradigm, firms set up free-service-for-data barters, because they have to work around the fact that the data input they seek comes predominantly in the by-product form of users' economic activities.[161] As users become increasingly empowered to port their data, the effect on this paradigm will be that data supplies become more widely accessible, not that data supplies increase. This raises a concern for inefficiency in the mid to long term, considering that significant economies of scale are present in data analytics.[162] Namely, for developing data analytics, limiting the input to by-product data will sooner or later become unproductive; it is necessary to diversify data input beyond the by-product kinds.

Besides, incorporating non-by-product data opens the possibility of building a stronger appropriability regime, which is supposed to encourage and sustain innovation.[163] When production input is limited to by-product data obtained through barters, firms have weak claims of exclusive use from the viewpoints of both data protection and competition preservation (see Section 6.1.). But when the data input is no longer a by-product, firms will be freer to establish exclusive claims through direct purchase. This points to the data-as-labour paradigm, where users could actively engage in data work in exchange for economic benefits.[164] In that exchange, appropriability could be enhanced

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[159] Charles I Jones and Christopher Tonetti, 'Nonrivalry and the Economics of Data' (2020) 110(9) American Economic Review 2819, 2819–20.
[160] Krämer (n 149) 8.
[161] They supply negative-profit services to induce users' economic activities, then reaping the by-product data. See Maryam Farboodi and Laura Veldkamp, 'A Growth Model of the Data Economy' (National Bureau of Economic Research, February 2021) <https://doi.org/10.3386/w28427> accessed 12 April 2021, 3.
[162] Krämer (n 149) 9.
[163] Sidney G Winter, 'The Logic of Appropriability: From Schumpeter to Arrow to Teece' (2006) 35(8) Research Policy 1100, 1106.
[164] Arrieta-Ibarra and others (n 13) 38–39 (attributing the limited application of artificial intelligence to the scarcity of non-consumption-related data supplied through the said

through contractual rules: in a user-firm trade of data as labour, the firm may use legitimate labour contracts to buy out the proprietary claims and thus attains the input exclusiveness that it so desires.[165]

These two merits of moving on from the data-as-capital paradigm—efficiency and appropriability—are not obscure from a firm's perspective. Yet this paradigm persists. A possible explanation is that incumbents perceive themselves as having more to lose than to gain from embracing 'data as labour'. The loss would be the user-exploiting market power they have accumulated thus far while the gain would be the unleashed potential of non-by-product data supplies. The implication is that the industry is perhaps structurally reluctant to a paradigm shift. A sign of this reluctance is that big tech firms seem unwilling to acknowledge the contributions of human data work to the development of their data analytics capabilities, possibly for the fear that people would increasingly view their data contributions in a professional—rather than leisure—context and start demanding better compensations.[166]

In that light, social pressure and regulatory actions are called for to instigate change.[167] Two pieces of work are laid out for regulatory authorities. First, devising mechanisms to lower the transactions costs of data labour. These transactions costs flow from the difficulties of, inter alia, data work valuation and tracking, data needs identification and articulation, and the devising of steady and efficient channels for passing data supplies.[168] Second, negating the power imbalance that is likely to persist between data laborers and employers. The next subsection expands on this one.

6.2.3. Negating the Persistent Power Imbalance

As discussed in Sections 2.3. and 3.2., the data-as-capital paradigm hosts an exploitative firm-user power imbalance. This imbalance may persist well into the data-as-labour paradigm for two reasons. First, the new paradigm is primarily about improving allocative efficiency instead of remedying

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barters). See also, Economides and Lianos (n 19) 5–6 (describing as a market failure that only data privacy protection, not proprietary protection, is afforded to consumer users in the digital economy); Jones and Tonetti (n 159) 2852–53 (identifying, through a sensitivity analysis, the substantial welfare benefits of giving property rights to consumers in highly innovative digital markets).

[165] See n 156 and accompanying text.

[166] Eric A Posner and E Glen Weyl, *Radical Markets: Uprooting Capitalism and Democracy for a Just Society* (Princeton UP 2018) 232–33. See also, Cade Metz, 'A.I. Is Learning From Humans. Many Humans' *The New York Times* (16 August 2019) <https://www.nytimes.com/2019/08/16/technology/ai-humans.html> accessed 12 April 2021.

[167] Posner and Weyl (n 166) 239.

[168] Katrina Geddes, 'Meet Your New Overlords: How Digital Platforms Develop and Sustain Technofeudalism' (2020) 43(4) Columbia Journal of Law & the Arts 455, 482–83. See also, Posner and Weyl (n 166) 237, 243–45.

distributional inequality. Second, monopsony is common in labour markets. The monopsony tendency is attributable to the market settings featuring search frictions and differentiated preferences of both employers and workers.[169]

Regulatory efforts should be made against this power imbalance in a data labour context. The aim is to empower data suppliers with rights and information transparency. First, authorities should encourage information-sharing mechanisms among data suppliers, so as to neutralize search frictions and to raise awareness regarding data labour value. Second, they should explore the possibility of setting minimum wages and facilitating collective bargaining, especially if the data labour at issue is disproportionally high-value compared to the compensations.[170]

Furthermore, Vincent et al (2021) identifies three types of collective actions that help data suppliers counteract monopsonistic exploitation: data strikes, supplying unusable data, and supplying data to competing buyers. By carrying out any of these actions (or threatening to do so), data suppliers can leverage with monopsonistic buyers into better data-trading deals.[171] Importantly, regulatory approval is a prerequisite for exercising these options. For example, 'deletion-based data strikes' require a right to delete past data, while a data portability right is a must for supplying data to competing buyers.[172]

Notably, however, these types of collective actions are not contextualized in the data-as-labour paradigm. As discussed in Section 6.2.2., one of the supposed merits of this paradigm is enhanced regime appropriability. Accordingly, actions aimed at negating the power imbalance should not come at the expense of invalidating buyers' proprietary claims over the data they have paid for. Specifically, unless somehow conditioned, rights to delete and to port past data are arguably incompatible with the data-as-labour paradigm because they nullify the basic idea of acquiring exclusive data through labour contracts.

This argument is not meant to prioritize the interest of data buyers over that of suppliers. We suggest that data suppliers and buyers should not be

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[169] Suresh Naidu, Eric A Posner and Glen Weyl, 'Antitrust Remedies for Labour Market Power' (2018) 132 Harvard L Rev 536, 553–55. See also, Arindrajit Dube and others, 'Monopsony in Online Labour Markets' (2020) 2(1) American Economic Review: Insights 33, 45.

[170] Nicholas Vincent and others, 'Measuring the Importance of User-Generated Content to Search Engines' (Proceedings of the 13th International AAAI Conference on Web and Social Media, July 2019) 513; Dube and others (n 169) 45.

[171] Nicholas Vincent and others, 'Data Leverage: A Framework for Empowering the Public in Its Relationship with Technology Companies' (Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency, Virtual Event Canada, March 2021) <https://doi.org/10.1145/3442188.3445885> accessed 12 April 2021, 218–21.

[172] ibid 218, 224.

automatically pitted against each other in the first place. This is because the welfare of data suppliers—who are ultimately consumers—hinges on buyer-side competition and innovation; heavy-handed actions against data buyers could negatively impact suppliers in the long term.[173] Besides, a monopsony that is on top now is unlikely to stay at its zenith always, so it might be futile to direct collective actions against a particular monopsony instead of the structural factors contributing to it.[174] In summary, the data-as-labour prospect should be welcomed for its potential to stimulate (dynamic) competition, although fine-grained measures would be needed to address the persistent market power issue. Based on Article 5(a), the following subsection discusses some possible initial steps towards that prospect.

6.2.4. Beyond the 'Choice' in Article 5(a)

Article 5(a) of the DMA could be a stepping stone to a data-as-labour landscape. It requires a 'specific choice' to be presented to end-users when a gatekeeper wants to combine personal data. This begs the question of what kind of choices—after an opt-in—could be available. Suppose that a user decides not to opt into a gatekeeper's data combination schemes and consequently the quality of a core service will be somewhat degraded. Accordingly, if the user still wants the highest possible service quality, (1) could they pay a monetary premium instead, or (2) could they commit to a separate data contribution to compensate for the disallowance-induced loss of efficiency? It is worth considering the viability of these two options following a refusal to consent, as there could be a policy opportunity to foster 'data as labour'.

Article 5(a) defines the application scope to 'personal data'. In certain situations, gatekeepers could be legally restrained from combining personal data even if specific choices were presented and user consent was given. The restraint would be from an inalienability rule on certain personal data, disabling or at least limiting the latter's commodity uses and exchange.[175] This is justified from two alternative standpoints: First, a personal data trade is likely to cause long-run harms to the data subject but the subject is unable to account for the harms in their decision making, thus warranting intervention.[176] This paternalistic standpoint has some validity, considering

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[173] Vincent and others (n 171) 224 (illustrating with a hypothetical concerted effort to vandalize Wikipedia).
[174] For the structural factors contributing to labour monopsony, see n 169 and accompanying text.
[175] Guido Calabresi and A Douglas Melamed, 'Property Rules, Liability Rules, and Inalienability: One View of the Cathedral' (1972) 85(6) Harvard L Rev 1089, 1092–93 ('An entitlement is inalienable to the extent that its transfer is not permitted between a willing buyer and a willing seller.'). See also, Paul M Schwartz, 'Property, Privacy, and Personal Data' (2004) 117 Harvard L Rev 2056, 2094–95 (proposing a 'hybrid inalienability' regime that allows individuals to trade their personal data on the one hand and to limit the future use of such data on the other).
[176] Calabresi and Melamed (n 175) 1113–14.

the fundamental rights related to personal data and the often bounded rationality of consumers.[177] Second, a personal data trade may entail negative externalities that are—measurable or not—too significant to make the transaction socially efficient.[178] This efficiency-based standpoint finds support in cases where the personal data of one subject coalesces with that of another, making their data rights difficult or impossible to delineate.[179]

Here we focus on alienable personal data. If a user chooses to disallow a gatekeeper from combining such data under Article 5(a), several conditions need to be present to animate the aforementioned Option (1) (direct pecuniary payment). The first one is users' willingness to pay money for their demand for an uncompromised platform service. The second one is relatively low costs to set up direct monetary transactions. Specifically, there need to be realistic and objective ways to measure the price value of the platform service at hand and translate the disallowance-caused efficiency loss quantitatively into a price increase. These conditions are largely market-driven, but regulators could help by promoting data literacy among consumers and particularly, illuminating the pitfalls in ill-informed preferences of ostensibly free platform services.[180]

More conditions are to be satisfied for Option (2) (alternative data contributions), in that data contributions need to be valorised alongside the platform service. For this, policy efforts could be made to institute union-like entities for certifying data work quality.[181] Another necessary condition is a demand for data labour from the platform service provider. Here, regulators could help by enforcing data portability rights, as portability enhances competition on the data analytics front, which in turn yields greater data labour demands.[182] Notably, the alternative data contributions should no longer be personal data. They are data labour payments that users make to retain access to a maximum-quality platform service. The idea is to honour a user's choice of not opting in more accurate user-profiling on the one hand and to compensate a gatekeeper's consequential loss of efficiency in providing a core platform service on the other hand. Accordingly, it would defeat the purpose of user opt-in if the contributed-as-labour data remained personal.

7. Conclusions

[177] Agustín Reyna, 'The Psychology of Privacy—What Can Behavioural Economics Contribute to Competition in Digital Markets?' (2018) 8(3) International Data Privacy Law 240, 244.
[178] Calabresi and Melamed, supra note 174, at 1111–12.
[179] Omri Ben-Shahar, 'Data Pollution' (2019) 11 Journal of Legal Analysis 104, 106, 115 (emphasizing the negative externalities of a two-party data trade with an analogy to environmental pollution).
[180] Schwartz (n 175) 2083.
[181] Geddes (n 168) 482.
[182] See the subsection 'Two Stages of Data Competition' to and following n 154.

In the data-as-capital paradigm, behavioural data is collected and monetized through avenues such as attention brokerage. Although somewhat welfare-enhancing, this makes consumers vulnerable to data exploitation. This article frames for discussion two specific types of data collection: third-party tracking and within-conglomerate data sharing. As the former becomes increasingly infeasible, data capitalists are adapting to the latter. This adaptation glosses over the old problem of user data exploitation and brings forward a new one of market power entrenchment. More apt regulations are called for.

In devising regulatory measures, authorities need to discern two scenarios: where market self-regulation is failing because competition is being misdirected by poor market design, and where market self-regulation is failing because competition is being suppressed by market power. As ex-ante measures are well underway, it should be reiterated that the regulatory purpose is to refresh competition, not to replace it—unless it is no longer refreshable.

Emergent studies show that competition is likely present among big tech platforms; it just may not be taking the traditionally emphasized static forms. Remarkably, economies of scale and scope are omnipresent on both supply- and demand-sides of digital platform markets. This motivates firms to conglomerate into ecosystems whereby they could raise switching costs and lock users into incompatibility so as to fend off rivals and facilitate entry attacks. But network effects and the ecosystem architecture have uncertainties and therefrom flows dynamic competition, albeit hinged on static market power.

Article 5(a) of the DMA proposal is a most recent effort to deal with the intricacies behind data combination practices. It is an ex-ante measure in form and a blend of data protection and antitrust considerations in substance. This provision needs complementary measures. There is good reason to view it as a market-design effort and to devise on that basis competition-enhancing measures. This article advises two endeavours: on the static front, using data portability and maybe standardization to unlock partial ecosystems interoperability; on the dynamic front, promoting data as labour based on Article 5(a), so as to enhance regime appropriability that is vital to data analytics innovation.