DIGITAL MARKETS AND ONLINE PLATFORMS

New perspectives on regulation and competition law

Edited by
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Centre on Regulation in Europe
Improving network and digital industries regulation

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FOREWORD

This CERRE publication provides food for thought as national, European, and global leaders look for efficient ways to address the challenges of online platforms.

These are a 21st century phenomenon. Those of us who can recall the 'analogue age' cannot help but be astounded at the scale and speed of the digital transformation. Yet such an upheaval is not without its challenges. Across the world, regulators and policy makers are grappling with how to establish a competitive, safe and fair online environment that also safeguards users' fundamental rights as citizens.

Their remit is wide. If we just look at economic regulation and competition, it encompasses, among other issues, market definition and market power, designing effective remedies for anti-competitive practices, non-discrimination, and the impact of big tech acquisitions on innovation. It also includes the complex role of data in promoting competition and innovation in digital markets and, more specifically, issues related to data sharing, privacy and portability.

Europe has led the way on data protection, and it is ready to do so again when it comes to the regulation of online platforms, which are so important for our lives and our economies. The European Commission is due to publish, from the end of 2020, several key proposals on these topics. In preparing its package, the Commission has engaged in a wide consultation exercise with all stakeholders.

I am convinced that, not least because of the complexity of the issues at stake, this is the right approach. Identifying the most adequate policy and regulatory framework to make digital markets competitive, safe, fair and innovative cannot be achieved without a deep and constructive dialogue between the key parties involved. It must also be based on a robust analytical framework.

Since CERRE's creation a decade ago, we have aimed at contributing effectively to this democratic process by gathering the collective expertise of our industry, regulatory and academic members. We have completed independent research providing new regulatory approaches in line with changes in technology, business models and markets. We have also provided an unparalleled trustworthy environment for interactions between experts and leaders from civil society, national and EU institutions, and our members, to share and debate differing perspectives, often based on our analyses and policy proposals. All this has made our institution unique.

This publication is just a snapshot of CERRE's contribution to the debate throughout this transformative period. It brings together concrete recommendations to policy makers, drawn from some of the most relevant pieces of research on online platforms' regulation completed by our academic staff over the last three years.

It also provides an additional illustration of the reasons for CERRE's ever-increasing recognition as a leading and pivotal think tank effectively contributing to a regulation of digital industries which promotes innovation and competition while helping EU citizens safely harvest the fruit of the digital economy.

More than ever, we intend to keep up our efforts and live up to our reputation. We will continue to map the path forward.

Bruno Liebhaberg
Director General

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INTRODUCTION

In the digital age, **consumers' attention** is an important and scarce resource, and all online Content and Service Providers (CSPs) are competing for it in one way or another. This is also why platforms have taken on a special role in the digital economy.

The very purpose of platforms is to aggregate the attention of many consumers by organising products, services, content, or other commercial or non-commercial offers to facilitate the search process, and enable better matches or allocations. Examples of this are search engines, booking platforms, social media platforms, ride-sharing, and accommodation-sharing platforms, or shopping platforms.

1. Characteristics of online platforms

Online platforms are powerful engines for growth and innovation. They allow small professional users to reach out to millions of customers at very low cost, they increase the amount of information accessible to customers and traders and, in the end, they enable new and disruptive business models to extend into existing markets and new markets to develop. However, online platforms are also at the centre of the policy debate regarding digital markets as they exhibit several economic characteristics that may challenge traditional approaches and which raise several policy concerns.

1. Digital platforms are online intermediaries that bring together at least two distinct user groups (e.g. buyers and sellers) between whom indirect **network effects** exist. This means that the value of participating on the platform is greater for at least one user group when more users of another group are present on the same platform. These network effects may lead to a **winner-takes-all phenomenon**, whereby the market 'tips' to the largest platform, defying the traditional notion of competition in the market. Therefore, one of the challenges in platform markets is to keep markets contestable, i.e. to foster the possibility of entry by new competitors, leading to **competition *for* the market**.

2. The **multi-sidedness of platforms** allows them to pursue a special business model, where one user group (typically the end consumers) does not pay a monetary price for using the platform. Revenues are then made from the other market side, i.e. the business users. On the one hand, this allows platforms to disrupt traditional business models, in which users are charged a positive price for the service they are using. On the other hand, this business model provides the platforms with incentives to collect personal and usage data (instead of a price) from end users, because this information can enhance the monetisation on the other side of

the market (e.g. through targeted advertisements). The collection of personal data may also improve the quality of the services offered, especially when personalisation is a factor. The multi-sidedness of platforms also makes the **determination of relevant markets** more difficult, because it will generally not suffice to consider each side in isolation to determine the relevant market and, subsequently, the **market power of platforms**.

3. Digital platforms are often **vertically integrated**, operating both as intermediary and as business user on the same platform. Their role as an intermediary allows them to steer consumer's attention towards their own upstream or downstream service, product, or content, rather than towards independent content and service providers (**self-preferencing**). This raises concerns around leveraging market power into upstream or downstream markets, which would, in turn, lower competition in these markets and provide the dominant platform with additional bargaining power vis-à-vis the business users. However, since the very purpose of platforms is to organise content for consumers and to steer consumers' attention towards 'valuable' content, **non-discrimination remedies** are difficult to impose. Moreover, vertical integration is usually associated with efficiency advantages and therefore **vertical separation** is rarely an ideal policy option either.

4. A digital platform's power may be further enshrined by the **continuous inflow of data**, stemming from the transactions mediated on the platform (e.g. search queries, purchase history, location data), which may provide the platform with a comparative advantage when pursuing data-driven innovations. Lack of access to up-to-date market data can in some circumstances be a **hindrance to contestability**, especially when there are positive feedback loops between data collection, data analysing and the improvement and personalisation of offers, products, and advertisements. Enabling contestability of data-driven platform markets by providing competitors and new entrants with access to such data, whilst at the same time maintaining innovation incentives for incumbents and preserving consumers' privacy, is a major challenge for policy makers.

5. Digital platforms evolve in very dynamic and global ecosystems where **innovation** is important, rapid, and often unpredictable.

> Therefore, the position of a platform is never secure; they can be rapidly displaced by new disruptive innovations in a Schumpeterian creative destruction process. The next 'innovators in a garage' in the US, China, Europe, or elsewhere, incentivise even the biggest digital platforms to continue to innovate and offer new and better products. Yet, there are also indications that some platforms have grown so big that they may be able to 'kill' competing innovators either through acquisitions or by utilizing their superior access to resources (e.g. data, risky capital, or skilled labour) to drive competitors out of the market or to discourage their entry in the first place. It is a difficult balancing act for public authorities to protect the innovation process in digital markets by providing both entrants and incumbents with high incentives to innovate.

The CERRE reports featured in this volume bring together the theoretical and empirical evidence from the academic literature to corroborate these characteristics and policy concerns. However, **'online platform' is a catch-all concept** that covers very different business models with different economic characteristics and private incentives. In designing a public intervention for digital platforms, it is of the utmost importance to keep those differences in mind and avoid over-generalized one-size-fits-all solutions. Nevertheless, we demonstrate in the subsequent reports that general policy guidelines can be derived, although their implementation will often need to be case-specific. Together, these policy recommendations lay out a way forward for EU policy makers on how to safeguard competition and innovation in digital platform markets.

2. The overarching goal for economic policy: enable entry and maintain contestability in new and emerging markets

The recommendations in the reports highlighted here have also partially fed into and are consistent with the 'Ambitions for Europe'

set out in the **CERRE White Paper** published in September 2019[1]. In the following, we re-formulate and re-organise the recommendations set out in the White Paper, focusing on those recommendations that emerge from the reports collected here. We make reference to which recommendations emerge from which reports. In sum, the policy recommendations set out here present a **road map for policy makers** that should be pursued within the next three to five years.

Due to the characteristics laid out above, particularly the presence of strong network effects and the role of data, entry barriers can be significant in digital markets, and, in reality, competition is rarely just 'one click away', as it is sometimes suggested. Once a platform market has tipped, which is often inevitable in digital markets, it is very difficult to restore contestability – and it may not even be necessary nor in the public's best interest. Having a single go-to platform for a specific service or content has strong inherent efficiency advantages because the platform in question can collect the necessary data to steer consumers to the right content, content providers and business users only have to affiliate with one instead of several platforms, and network effects can unfold to the fullest. The main challenge for economic policy is rather to guarantee:

- **fair and transparent competition on the platform**, so that new or existing market players can develop their services;
- that **new or emerging markets and services are indeed contestable** for existing and new market players.

If both conditions are achieved, then an innovative firm can scale and grow on existing platforms, and/or venture into new markets with a level-playing field, where it can potentially become a large platform itself in the long run. Eventually, the new platform may even rise to become a vital competitor to the existing platform on which it grew, or which it defeated in conquering the new market. However, expecting new firms to go head-to-head with a dominant platform in its core market is an unrealistic goal. Crucially, niche entry and growth is the mode of entry that today's tech giants used (Google as a pure search engine, Amazon as a pure book retailer, or Facebook as a localised

1. CERRE White Paper: Ambitions for Europe (September 2019). Digital Platforms, Data Governance, Artificial Intelligence, Media & Content and Digital Infrastructure. Available at www.cerre.eu/sites/cerre/files/cerre_whitepaper2024_digitaltelecommedia.pdf

social network for college students), albeit in a much more nascent state of the digital economy. Ultimately, a healthy digital market ecosystem should be made of a sufficient number of independent firms, each of which only controls a small subset of the key platform markets and none of which can comprehensively track and control consumers' activities online.

Given these goals, the policy recommendations made in the subsequent CERRE reports can be organised into three key areas for action: (i) More effective enforcement, (ii) increased transparency and switching easiness, and (iii) providing access to key innovation capabilities, particularly access to consumer raw data. We elaborate on each area below.

3. More effective enforcement

The need to safeguard fair and vibrant competition, which is also seen as an important driving factor for innovation, is, of course, nothing new for policy makers. However, the characteristics and complexities of digital markets have challenged some of the traditional approaches. The CERRE reports on digital platforms investigate and make recommendations on three key areas of policy making that need to be updated, particularly in the context of competition policy: determination of market power, merger control, and the design of effective competition remedies in digital markets.

3.1 Update determination of market power

The CERRE report by Franck and Peitz considers in detail the challenges that arise when determining relevant markets and market power in platform markets. The key takeaway from their report is that the single-sided logic, which has traditionally been applied in competition law, is ill-fated in the context of platform markets. Policy makers and enforcement agencies almost always need to take into account the interrelationship between the different market sides (e.g. consumer-market and the advertising-market) when considering `relevant markets' and 'market power' in digital platforms markets. So, the

meaning of a market should be interpreted more widely, e.g. by also taking into account free products and services.

In particular, Franck and Peitz suggest that the competition law guidelines should be updated to take into account the degree of multi-homing and single-homing in a platform market. By contrast, market shares, which is traditionally used as an indication of market power, needs to be viewed with caution in platform markets. If at all, market shares should not be determined by the number of (active) users, but rather based on usage volumes or revenue shares. Concerning the latter, revenue-shares must be aggregated over the interdependent market sides, and not just over the consumer-facing market side, to derive a meaningful measure. In any case, market shares should only be one of several indicators used to assess market power.

Franck and Peitz also suggest considering more direct indicators of market power, such as the absence of entry attempts or high overall profitability.

3.2 Update merger control

Big tech mergers and acquisitions have recently gained considerable attention in policy circles. In particular, there is a concern about under enforcement. The vast majority of mergers in the digital economy have not been scrutinised, possibly due to insufficient notification thresholds, or when cleared, possibly due to a lack of accepted theories of harm or high information asymmetries between the authorities and the acquirer.

In the CERRE report by Bourreau and de Streel, the authors suggest updating the criteria for notification thresholds to include i) the value of the acquisition, ii) the market shares of the firms involved (considering the caveats laid out under 3.1), and iii) the characteristics of the acquirer. For example, if the acquirer is considered to have gatekeeping market power ('significant market status') then all acquisitions by this firm may need notification.

Bourreau and de Streel also highlight the various theories of harm that may be considered. Especially intricate are innovation theories of harm because a decrease in competition may come along with an in-

crease in innovation. This is often likely in big tech acquisitions, where there are strong complementarities between products and/or strong synergies between innovation capabilities (e.g. in the context of mergers motivated by the acquisition of artificial intelligence technology and data). To strike a balance in terms of the potential trade-off between competition and innovation in a fast-moving digital economy, five key recommendations are made:

1. An efficiency defence, clearing the merger, should be possible; and this should be analysed simultaneously with the anti-competitive effects, rather than sequentially following the harm analysis.
2. Competition authorities should focus more on potential competition and the control of innovation capabilities rather than on existing competition when considering theories of harm alongside innovation capabilities.
3. Move the standard of proof in merger cases, from a 'more likely than not' to a 'balance of harm' standard taking into account the risks but also the costs of antitrust errors.
4. The burden of proof in merger regulation should also be updated, allowing for the introduction of presumptions. This would allow mergers with likely welfare-enhancing effects (based on robust economic theories) to be cleared and mergers with likely welfare-decreasing effects to be blocked, without the need for a detailed case analysis. Such presumptions may then be rebutted by the acquirer, essentially reverting the burden of proof to the acquirer. Even though legal precedent is relatively scant and economic theories of harm are still developing in the context of digital markets, the introduction of presumptions is considered valuable here because they would force the acquirer to disclose information to the competition authority, reducing, therefore, the significant information asymmetry between them.
5. In cases of high uncertainty, the merger may be cleared, but with the option to reverse the decision of the merger review based on Article 102 TFEU ex-post, in case it later becomes apparent that the merger has significantly reduced competition. To that end, anti-trust agencies may require a confidential future divesture plan to clear the merger.

3.3 Apply experimental remedy design

Even in competition cases where anti-competitive conduct has been established in a legally and economically sound manner, there may eventually be under enforcement due to an inability to determine appropriate remedies that effectively restore competition. In particular, Feasey and Krämer consider appropriate anti-trust remedies for the contentious case where a platform is vertically integrated and has been found to use anti-competitive self-preferencing to steer consumers' attention to its integrated downstream firm rather than to a (possibly better) downstream rival.

At first glance, the appropriate remedy seems to be evident: the platform's intermediation service should be unbiased and not favour its downstream service. However, when viewed in more detail, such a non-discrimination remedy turns out to be very difficult to implement. On the one hand, the authority could demand a structural separation, which would avoid the incentive problems that have induced the platform to conduct self-preferencing in the first place. However, this remedy is usually reserved as a measure of last resort, and, for digital platforms, it may have an important cost in terms of forgone synergies and efficiencies. On the other hand, the authority can agree with the firm on an improved allocation mechanism through which the platform matches consumers' requests with downstream services or content.

Feasey and Krämer layout that such mechanisms can either be factor-based, i.e. derived from several (objective) ranking factors, or payments-based, i.e. determined in an auction or a hybrid of the two. However, both payments-based mechanisms and factor-based mechanisms are problematic in this context. The latter can be very complex (such as Google's search ranking) and are usually subject to continuous development. Even if an appropriate mechanism could be devised in agreement with the authority, it would require continuous monitoring by the authority to ensure its effectiveness. This is usually not feasible for authorities. Payment-based mechanisms, in turn, allow a vertically integrated platform to bid with 'wooden dollars' for prominent placement of its downstream service. Thus, without structural separation, any payment is essentially just a transfer from one of the platform's accounts to another. In any case, the effectiveness

of non-discrimination remedies, be it a factor-based, payment-based, or hybrid mechanism, is not clear ex-ante. Furthermore, in practice, competition authorities usually relegate the task of determining an appropriate 'fair' allocation mechanism to the platform itself.

Krämer and Feasey recommend that in this case, as well as in other similar cases where a platform is remedied via a significant change in how it presents content to consumers, the effectiveness of the remedy (the new design) should be tested using **field experiments**. Otherwise, it is difficult to predict the impact of the remedy on competition in the downstream market and whether bias will be eliminated. As digital firms will inevitably run such field experiments themselves before proposing an improved design to the authorities, the latter should at least be granted access to the experimental data used by the platform itself to determine its proposal. Besides, they should be allowed to direct the platform to run other experiments to assess their effect on outcomes.

In essence, this calls for more **experimental enforcement** to overcome the asymmetry of information and the novelty of some regulatory issues faced by authorities. This is also in the spirit of "anticipatory regulation", which calls for a 'flexible, iterative learning approach' by authorities rather than a 'solve-and-leave mentality' in complex and uncertain and novel regulatory environments[2]. Of course, experimental enforcement also raises several challenges, particularly in terms of feasibility, costs for the firms, and the collection of information for the authorities. One of the main challenges is the inherent tension between regulatory experimentation and legal predictability. During the experimentation phase, legal predictability may be low but this is the implicit price to pay to find the most effective and efficient rules and remedies. In an environment that is frequently and rapidly changing, the determination of the best remedy may be more difficult, and hence more costly, but its benefit may also be higher. More experimentation may also likely require a different institutional set-up, for example, a specialised authority which takes over the duty of implementing and monitoring a remedy imposed by the competition authority.

2. See Armstrong et al (2019) 'Renewing regulation 'Anticipatory regulation' in an age of disruption', NESTA, March 2019. p.27. Available at: www.nesta.org.uk/report/renewing-regulation-anticipatory-regulation-in-an-age-of-disruption/

Similarly, Nobel Prize winner Jean Tirole has called for "more agile policies, such as business review letters (giving limited legal certainty to firms for a practice, subject to conditions set by the authorities) or **regulatory sandboxes** where new business models can be tested in a 'safe' environment"[3]. Regulatory sandboxes are now used, for instance, by the Financial Conduct Authority in the UK and they allow the financial businesses that need an authorisation to test innovative propositions in the market with real consumers and with the help of the regulatory authority. In the present context, platforms may, for example, submit experimental data before making changes to their factor-based mechanisms to obtain a 'safe harbour' ruling from the authority.

4. Increased transparency and ease of switching

Next to supply-side measures ensuring market contestability and facilitating competition, EU policies and regulation should also empower the users of online platforms (both private and business) in a way that they have the possibility of 'voting with their feet' when they are not satisfied by the services provided or to call for action from a competent authority if needed. To achieve this, at least two steps are necessary.

First, the transparency of the platforms' actions should be increased. Second, user lock-in should be avoided as far as possible and consumer switching should be facilitated. In both domains, progress has been made at the EU level in recent years. First, the recent reform of EU consumer protection rules and the new Regulation on Platform to Business[4] have increased transparency and users' information, which was a welcome step. However, the Platform-to-Business regulation is a horizontal regulation that does not impose heightened transparency standards for large or important platforms (e.g. with gatekeeper status), something we argue needs to be amended. This is addressed in more detail in 4.1 below.

Second, platform users generally face two important types of **lock-in when using a platform**: lock-in from network effects, and lock-in from losing access to their accumulated data on the platform. On the one hand, lock-in due to network effects means that users cannot switch because they could no longer participate in the same network as the other users, either on the same side or on the other market side. It can only be overcome if platforms were **interoperable** to some degree. For example, a consumer could move from one social media network to another and continue to be able to exchange simple messages based on agreed-upon standards and interfaces.

Although such standards may limit the 'richness' (e.g. for format, appearance, size) of messages that can be exchanged across platforms, and although the appearance of the message may differ from platform to platform, it would at least allow for some interoperability between platforms. This would enable consumers to choose which platform to join, or with which platforms to share messages. It is based more on the individual merits of a given platform than on the existing size of the network effect. To date, CERRE has not conducted a detailed analysis of the need for and the effects of interoperability in platform markets, but other commentators have noted that, especially in the context of communication and social media platforms, more interoperability would be welcomed[5]. Yet, interoperability is a double-edge sword because, although it might enable users to switch from an incumbent platform to a new platform, it may also work in the opposite direction, which could stifle emerging competition.

Moreover, any such interoperability standard would have to strike a balance between avoiding consumer lock-in and allowing flexibility, so that platforms can continue to compete based on differentiation and innovation. Therefore, demanding interoperability could backfire

3. See www.livemint.com/Technology/XsgWUgygtR4uaoME7xtITI/Regulating-the-disrupters-Jean-Tirole.html

4. Directive 2019/2161 of the European Parliament and of the Council as regards better enforcement and modernisation of EU consumer protection rules; Regulation 2019/1150 of the European Parliament and of the Council of 20 June 2019 on promoting fairness and transparency for business users of online intermediation services.

5. Inter alia, see Furman, J., Coyle, D., Fletcher, A., McAuley, D., & Marsden, P. (2019). Unlocking digital competition: Report of the digital competition expert panel. UK government publication, HM Treasury. p. 73; Jacques Crémer, Yves-Alexandre de Montjoye, and Heike Schweitzer. «Competition policy for the digital era.» Report for the European Commission (2019); Zingales and Rolnik (2017). A way to own your social media data. New York Times. Available at: www.nytimes.com/2017/06/30/opinion/social-data-google-facebook-europe.html

and protect monopolies instead of breaking them. Since CERRE has not conducted a detailed study on interoperability obligations for online platforms yet, we do not make an explicit recommendation here. However, in three recent reports (Krämer, Senellart and de Streel; Krämer, Schnurr, and Broughton Micova; Feasey and de Streel), CERRE has investigated lock-in due to data and the role of **data portability** in this context, for which we see a need for a widened scope of data portability over and beyond the existing provisions in GDPR. This will be addressed in more detail under 4.2 below.

4.1 Increase transparency obligations for large gatekeeper platforms, especially vis-à-vis authorities

The CERRE report by Krämer, Schnurr, and de Streel, which was devised before the Platform-to-Business regulation, investigates whether bright-line non-discrimination obligations for platforms, similar to net neutrality obligations for Internet service providers, are a necessary and useful policy instrument in the context of platform regulation. Although the report finds that there is no sufficient economic justification for general ex-ante non-discrimination obligations, it also mentions concerns over pay-for-prominence schemes on platforms (e.g. sponsored rankings). Specifically, that such schemes may allow the platform to extract more value from business users of the platform (often SMEs), which may result in an unfair allocation of the total value that is created on the platform. In particular, for business users, it is often relatively unclear how a ranking was achieved and whether or not there was discriminatory conduct on behalf of the platform. Platform-to-Business regulation has partly addressed this issue. It demands platforms be more transparent about the general factors that feed into a ranking and has introduced new possibilities for the business users of a platform to redress decisions taken by the platform, such as de-listing.

However, the recommendations in this report went one step further, and are still worth considering after the Platform-To-Business regulation has come into force. They recommend that the most important online platforms (e.g. with gatekeeper status) should be subjected to stricter transparency obligations and be closely monitored by a competent authority. In particular, they suggest that **information on how**

platforms' sponsored ranking results are determined (e.g. bids submitted by the content providers, the platforms' quality assessment of the content providers, click-through-rates, etc.) could be collected. As this data collection should be limited to a few important online intermediaries, it is feasible to clarify the precise nature of data to be shared in a dialogue between the public agency and the respective stakeholders. The data collection should then be done continuously.

This would have several advantages. First, this data collection effort could establish an empirical basis for quicker and better assessment and possibly even better enforcement of competition issues, by having both historic and up-to-date information readily available. Similarly, competition authorities in the European Union can rely on market information collected by regulatory agencies, which has evidently accelerated competition law cases in this domain and also made potential abuses more transparent due to available data sources. Second, the simple fact that such information is collected and readily available to authorities could act as a "**coercive regulatory device**", which may prevent unjustified discriminatory actions in the first place and render more heavy-handed intervention unnecessary. Overall, continuous data collection is considered to be a promising policy instrument to foster effective competition between content providers in the long run, i.e. to warrant dynamic efficiency.

4.2 Increase the scope of data portability obligations for large platforms

The CERRE report by Krämer, Senellart, and de Streel considers the legal, technical, and economic framework for data portability in Europe. Much progress has been made here in recent years, particularly through the introduction of a right to data portability in Art. 20 GDPR, but also through sector-specific regulation such as PSD2. However, the report concludes that data portability could be made more effective in the context of the digital economy, as there are some important limits to the provisions under GDPR, and other sector-specific regulation generally does not apply. For example, GDPR applies only (i) to personal data, which (ii) has been provided by the data subject to the data controller and where (iii) processing is based on consent or contract (leaving out any personal data processing based on other grounds such as legitimate interests).

This throws into question whether observed (behavioral) data, collected on the platform and – by the platform – outside of the platform, is under the scope of data portability. Moreover, data portability is limited to personal data and therefore generally does not apply to business users. Furthermore, the data controller has one month to provide the data such that a continuous transfer of data is not warranted. Krämer, Senellart, and de Streel, therefore, suggest increasing the scope of data portability obligations in the context of digital markets, in particular by demanding large gatekeeper platforms to offer continuous data portability through standardised interfaces (APIs) for both personal and non-personal data, including observed data. This would truly enable consumers to switch platforms, or multi-home between them, without losing access to their up-to-date data and recent activities (e.g. search history).

In the report by Krämer, Schnurr, and Broughton Micova, this recommendation is made as well, but it originates from a slightly different vantage point. This study, which considers the role of consumer data in digital markets, concludes that such data would also be valuable beyond the platform on which they were created to stimulate competition and innovation in digital markets (see also 5. below). However, providing third parties with access to detailed consumer profiles is usually not possible due to privacy regulations. In this context, continuous data portability can be an important tool because it is based on an individual user's consent. It would allow consumers to transfer their individual-level data to a (possibly competing) platform, thereby allowing it to better learn from data to improve its service, and thus to become more competitive and innovative.

5. Providing access to key innovation capabilities, particularly access to consumer raw data

When some digital innovation capabilities are controlled by dominant platforms and are truly indispensable for new start-ups, public authorities may impose the sharing of such innovation capabilities as it does for other indispensable facilities. This may particularly be the case for consumer data when the concentration of consumers' attention on some online platforms provides indispensable access to timely raw usage data (e.g. search queries or purchase histories). In three case studies comprising online search, e-commerce, and media platforms, the report by Krämer, Schnurr, and Broughton Micova highlights that access to such raw usage data is indeed a major competitive factor for key digital services. Usage data, even if provided in anonymised form, can be very valuable to start-ups because they can train and test potentially competitive data-intensive services and compete with existing platforms. The indispensability of a dataset depends on the type of data and the type of algorithms to be developed and, therefore, always requires a case-by-case analysis. If data is found to be indispensable then authorities may impose the sharing of those data, provided they take into account the following: i) the economic benefits incentivising data owners to collect and store the data, ii) the privacy of the data subject when data are personal, iii) the security and integrity of the data, and iv) the sharing process.

Given that data is non-rivalrous in nature, its use by one party does not necessarily lead to exhaustion or a decrease in value for another party. The resulting increase in the fluidity of data in the internal market could increase consumer welfare (through more/greater choice and decreased lock-in effects), stimulate new business models and render markets more competitive (through a reduction in network effects and switching costs), and ultimately also contribute to more innovation in AI (by making data available to a broader pool of players). The report by Krämer, Schnurr, and Broughton Micova, as well as

the companion report by Feasey and de Streel, highlight that **two different modes of data sharing may be necessary to balance innovation, competition, and consumer privacy in platform markets**.

First, a small set of dominant platforms, possibly even a subset of those with 'gatekeeper status', should be mandated to **share aggregated and anonymised raw user data in bulk**. To preserve innovation incentives for the data provider, this should predominantly apply to observed and volunteered raw user data that was collected as a by-product of consumers' usage on the platform. In some cases, other data may also need to be shared, but, in that instance, an appropriate price would have to be devised for those data sets. In any case, data should be shared again in continuous real-time through standardized interfaces to provide a level-playing field for data recipients. Krämer, Schnurr and Broughton Micova also discuss what such bulk data sharing obligations might look like in the context of search, e-commerce, and media. Most importantly, they find that there is no one-size-fits-all approach and that the specific data sharing remedies will have to be devised on a case-by-case basis. In particular, there may be a need to vet those seeking access to data and to tailor the provided data sets to the specific firm. This may come along with heightened obligations for the data access seeker, including provisions on illegal data anonymisation and possibly a fair-and-non-discriminatory price to be paid for access.

Second, a larger set of firms, possibly going beyond the 'gatekeeper platforms', should be obliged to offer **continuous data portability in real-time through standardised interfaces**. This echoes the recommendation already made under 4.2. Similarly, here, only raw user data (volunteered and observed) should fall under these obligations. Taken together, bulk sharing of aggregated user data and individual data sharing based on data portability could provide non-dominant firms with a sufficient amount and detail of consumer data to be competitive and innovative. Therefore, we view this as an important pillar for achieving the twin policy objectives that new firms can grow and scale in the digital economy, whilst preserving European privacy values.

Feasey and de Streel also consider other requirements for the effective implementation of data sharing remedies. They find that these include

regulatory oversight of the firms that are to obtain access to the data, mechanisms for resolving disputes and for policing anti-competitive conduct by participants, the development of the technical standards and interfaces to enable data sharing, the specification of the data to be shared and, in some circumstances, the determination of prices to be paid for access to data. Some existing data sharing arrangements, such as those that have been developed to support Open Banking in the UK, offer some insights into what will be required. However, the scale of data sharing that is likely to be required to enable entry and maintain contestability in digital markets is both unprecedented and likely to require a whole new set of regulatory institutions to effectively enable it.

6. Conclusions

Based on several recent CERRE reports, collected in this publication, we have made recommendations on the future policy framework for digital platform markets. It is important to note that we have focused on economic policy measures geared at enabling entry and maintaining contestability in new and emerging markets. We have not included proposals for non-economic regulation, such as on hate speech or media plurality, which are, of course, also important and have partly been addressed in recent CERRE reports[6].

Our recommendations highlight that we deem:

- **platform transparency and associated data collection by authorities, as well as**
- **data sharing by platforms (initiated through consumers or authorities)**

6. See Michèle Finck, 'Artificial Intelligence and Online Hate Speech' (Centre on Regulation in Europe, January 2019), available at https://cerre.eu/sites/cerre/files/CERRE_Hate%20Speech%20and%20AI_IssuePaper.pdf, and Sally Broughton Micova and Sabine Jacques, 'The Playing Field for Audiovisual Advertising: What Does It Look like and Who Is Playing' (Centre on Regulation in Europe, April 2019), available at: https://cerre.eu/sites/cerre/files/cerre_playingfieldaudiovisualadvertising_2019april.pdf

As the two most important overarching policy measures for platform markets in the near future, because they facilitate enforcement, consumer choice, and innovation capabilities in the digital economy. By contrast, bright-line prohibitions and general rules will often not capture the necessary diversity of platforms and their associated business models, or they will be difficult to implement and enforce when looked at in detail.

Nevertheless, in the context of the digital economy, it is desirable to move towards a **coherent horizontal legal framework**. The boundaries between sectors, especially in the digital economy, are increasingly hard to draw. This is not only so for different types of platforms, but also for the digital versus physical sphere. For example, several large digital platforms are currently expanding and entering into physical markets, such as transportation, farming, or shopping. Therefore, as a coherent and integrative legal framework is developed between competition law, data protection, and consumer protection law, duplicative sector-specific legal approaches should be phased out. Currently, the legal system treats data protection regulation, consumer protection, and competition law largely separately from each other, including from an institutional perspective. However, **to achieve coherent regulation of platform markets, the approaches of competition law, data protection, and consumer protection need to be better aligned and intertwined**.

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MARKET DEFINITION AND MARKET POWER IN THE PLATFORM ECONOMY

MARKET DEFINITION AND MARKET POWER IN THE PLATFORM ECONOMY

Jens-Uwe Franck, Martin Peitz

May 2019

This CERRE report considers the challenges that arise when determining relevant markets and market power in platform markets. It emphasises that the single-sided logic traditionally applied in competition law is ill-suited in the context of platform markets. Policymakers almost always need to take the interrelationship between the different market sides into account when considering `relevant markets' and 'market power' in digital platform markets. Therefore, the meaning of a market should be interpreted more widely.

The authors suggest that the guidelines for the application of Articles 101 and 102 TFEU should be updated to take into account the degree of multi-homing and single-homing in a platform market. If at all, market shares should not be determined by the number of (active) users, but rather based on usage volumes or revenue shares. In any case, market shares should only be one of several indicators to assess market power.

The authors also suggest considering more direct indicators of market power, such as the absence of entry attempts or high overall profitability.

Context

Platforms play a central role as facilitators of interactions and transactions between users. The value of the services they offer not only often depends on the inherent service features provided to the users but is also, and possibly primarily, determined by whether and how often other users are active on the platform, i.e. how prominent network effects are on the platform. In particular, 'two-sided platforms' bring together two different user groups who are linked through cross-group external effects.

With the rise of digital platforms and the natural tendency of markets involving platforms to become concentrated, competition authorities and courts are more frequently in a position to investigate and decide merger and abuse cases that involve platforms. A proper understanding of the ensuing market environments requires an understanding of which products or services should be included in the analysis.

Multi-markets approach

Competition authorities and courts are well-advised to uniformly use a multi-markets approach when defining markets in the context of two-sided platforms. The multi-markets approach is a more flexible instrument compared to the competing single-market approach, which defines a single market for both sides of a platform, as it naturally accounts for different substitution possibilities by the user groups on both sides of the platform.

While one might think of conditions under which a single-market approach could be feasible, the necessary conditions are so severe that it would only be applicable under rare circumstances. Moreover, the possibility to recognize that a single-market approach might be applicable under certain conditions would create substantial risks of an authority or a court adopting it erroneously. Based on a critical analysis of cases where a single-market approach has been applied, the report finds this concern is indeed well-founded.

Using the multi-markets approach does not spare the competition authorities and courts from incorporating network effects since market definition on one side of the platform depends on user behaviour on the other side, as well as on the strength and the direction of external

effects. Furthermore, cross-group external effects can appropriately be considered at subsequent stages of a competition law analysis. First, those effects are important to appraise the significance of market shares as an indicator of market power. Second, cross-group external effects may be taken into account, in particular when appraising the existence of anti-competitive effects under Article 101(1) TFEU or the conditions of an exemption under Article 101(3) TFEU; when applying the SIEC test under Article 2 of the EU Merger Regulation; or when ascertaining an abuse under Article 102 TFEU.

Adequate competition analysis of two-sided platforms requires that market definition does not (finally) determine whether or not pro- and anti-competitive effects, or the welfare effects on different groups of consumers, can be balanced. Thus, when it is acknowledged that a weighing of different and diverging effects is allowed, or even required if these effects relate to a single market, then applying such a weighing must be allowed or required just in the same way for cross-group external effects on different sides of a two-sided platform that belong to different markets. The European Commission should clarify these aspects, in particular in its Guidelines on Article 101(3) TFEU and the assessment of horizontal mergers.

Market definition

The legal concept of a "market" should not be interpreted as requiring a price to be paid by one party to the other. It is not sufficient to consider the activities on the "unpaid side" of the platform only indirectly by way of including them in the competition law analysis of the "paid side" of the platform. Such an approach would exclude certain activities and ensue positive or negative effects on consumer welfare from a competition law perspective. Instead, competition practice should simply recognize that there can be *"markets" for products offered free of charge*, i.e. without monetary consideration by those who receive the product.

A "market", as a concept of competition law, should be understood as consisting of transactions between two or more parties, of which at least one acts for economic purposes. This is apparent in cases where a product is provided for remuneration. Moreover, in cases where a product is offered free of charge, it suffices to demonstrate that the activity is part of a broad or a long-term strategy to generate revenue.

This definition of a "market" is meant to exclude essentially (only) activities that involve the exercise of power by public authorities and philanthropic activities.

An amendment of the guidelines on the application of Articles 101 and 102 TFEU is desirable as it can provide guidance also to the Member States' authorities and courts which apply EU law, and it may also motivate a corresponding interpretation of domestic competition law.

Market definition has to take into account the degree of multi- and single-homing by platform users. The decision to multi-home often depends on the degree of multi-homing on the other side, which in turn may be affected by contractual clauses imposed by platforms. The degree of multi-homing on one side is not only relevant for the substitutability between platform services in this market but also for the substitutability in the market for platform services on the other side. If users on one side of the platform multi-home, while users on the other side of the platform single-home, it is appropriate to define a monopoly market on the multi-homing side, as the platform is the unique access provider to its single-homing users on the other side – here the platform can be seen as the gatekeeper to its single-homing users.

There may exist multiple markets on each side of the platform; for example, a platform may offer different categories of services or may be active in different regional markets. However, multiple markets on one side may be linked with each other if users have a positive opportunity cost of visiting a platform. Consequently, these markets should not be analysed in isolation; their interdependence should be accounted for.

The SSNIP test, used as a concept for market definition, can be applied to two-sided platforms, albeit in an adapted form. It is to be employed on each side of the platform, while cross-group external effects and their interplay must be included. Although it is difficult to empirically implement the SSNIP test in the context of two-sided platforms, *the SSNIP test is a useful instrument for competition practice if applied as a thought experiment*: it provides conceptual clarity regarding demand-side substitutability.

Market power

The application of competition law often requires an assessment of market power. Using *market shares as indicators of market power*, in addition to all the difficulties in standard markets, *raises further issues for two-sided platforms*. When calculating revenue shares, the only reasonable option is to use the sum of revenues on all sides of the platform. Then, such shares should not be interpreted as market shares as they are aggregated over two interdependent markets. Large revenue shares appear to be a meaningful indicator of market power if all undertakings under consideration serve the same sides. However, they are often not meaningful if undertakings active in the relevant markets follow different business models.

Market shares

Market shares can be based on the number of active users. If multi-homing is pronounced on one side of the platform, there may be little competition among platforms for these multi-homers. The ratio of users on this side of the platform relative to all users of this and comparable offers provides then a lower bound on a platform's market share on this side.

If the user number is growing over time, an even more conservative approach is to relate the actual size of the platform on one side to the potential overall market size. Then, the market share on one side is calculated as the number of users active on this platform relative to the total number of active and potential users.

Other than revenues and user numbers, market shares can be based on usage volume. In particular, if users on one side are heterogeneous regarding the intensity with which they use a platform, it is preferable to consider usage volumes rather than the number of users. Both revenue-based and quantity-based market share data are relevant information for competition authorities.

However, given potentially strong cross-group external effects, market shares are less apt in the context of two-sided platforms to indicate market power (or the lack of it). Therefore, where market shares are used as a measure of market power, the law should abstain from defining "hard" thresholds. Instead, market shares should either be considered as (only) one out of a plurality of factors that determine

market power. Or, where it seems nevertheless appropriate to specify market share thresholds to facilitate the application of the law, thresholds should be accompanied by substantive and/or procedural mechanisms that prevent under- or over-inclusiveness through the application of the thresholds.

While tipping suggests that the market is concentrated, it is not necessarily an indication of market power. Yet, market tipping gives rise to persistent market power if potential competitors are unlikely to challenge the incumbent platform.

Barriers to entry

Barriers to entry are at the core of persistent market power and, thus, the entrenchment of incumbent platforms. They deserve careful examination by competition authorities. Barriers to entry may arise due to users' failure to coordinate in the presence of network effects. Barriers to entry are more likely to be present if the industry does not attract new users and if it does not undergo major technological change. Moreover, consumer switching costs sometimes depend on the number of platform users and, in this case, barriers to entry from consumer switching costs increase with platform size.

Since market power is related to barriers to entry, the absence of entry attempts may be seen as an indication of market power. However, entry threats may arise from firms offering quite different services, as long as they provide a new home for users' attention and needs.

Other measures as indicators of market power

An adjusted Lerner index on each side reflects the pricing power of a two-sided platform on the respective side. The pricing equations are based on opportunity costs that include cross-group external effects. A high Lerner index on one side is an indication of market power on this side.

High overall profitability is an indication that a platform has market power in some of the markets in which it is active. However, initially, low overall profits or losses should not be seen as proof of a lack of market power. It may, however, be difficult to obtain reliable information on the Lerner index and profitability.

In some cases, **there may exist direct evidence of market power**. In light of the difficulties of calculating and interpreting other measures of market power, such evidence is of particular importance.

Access the full report

IMPLEMENTING EFFECTIVE REMEDIES FOR ANTI-COMPETITIVE INTERMEDIATION BIAS ON VERTICALLY INTEGRATED PLATFORMS

IMPLEMENTING EFFECTIVE REMEDIES FOR ANTI-COMPETITIVE INTERMEDIATION BIAS ON VERTICALLY INTEGRATED PLATFORMS

Richard Feasey, Jan Krämer

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The issue of 'intermediation bias' by vertically integrated digital platforms has been the subject of a number of competition investigations in recent years. This report focuses on what remedies may be available to relevant authorities when they have determined such bias exists.

The paper finds that many potential remedies have at least some drawbacks. However, payment-based mechanisms (already used by platforms in the intermediation process) seem to offer the most advantages for competition authority use as a remedy. Yet it must be noted there are also concerns about this approach – in particular the 'wooden dollars' issue.

The fundamental conclusion from the authors is that any remedy should be tested using field experiments. The paper calls for authorities to have access to the experimental data used by the platform itself in designing any remedy proposal, and the power to direct the platform to run other experiments in order to assess their effectiveness. This experimental approach would require new institutional and legal arrangements, but – combined with the sharing of experimental data – could significantly improve the quality and effectiveness of remedies for intermediation bias.

Context

This report considers the challenges that arise in remedying 'intermediation bias' by vertically integrated digital platforms which match the needs of different groups of users so they can transact with each other. Platforms perform this intermediation function by displaying and ranking those services or products which are most relevant to the users' needs and, in doing so, compete for consumers' attention.

Competition authorities have prosecuted a number of significant cases involving intermediation bias and it seems likely that further cases will be pursued in the future. It can be very difficult to detect bias in the first place, or to determine the source of any bias that has been detected. Digital platforms use very complex algorithms to perform their intermediation functions and make frequent changes to them. Distinguishing between legitimate changes which improve the quality of matches and those which unfairly bias them can be very difficult since the impact of any individual adjustment can be subtle and the effects can be cumulative. This task may be even more difficult ex post, as competitive conditions may have changed in the meantime.

This report does not imply that all vertically integrated platforms engage in biased intermediation, nor does it elaborate on how to detect intermediation bias and theories of harm. Rather, it presupposes that a competent authority, whether a competition authority or a regulatory authority with the power to impose ex-post remedies, has identified intermediation bias and that it is necessary to remedy it. The aim of this report is to discuss the approach to remedies in this context.

Challenges when remedying intermediation bias

The challenge of remedying intermediation bias arises in part because a user's attention is rivalrous and the selection and ranking of matches must involve giving prominence to some results and demoting or excluding others. Effective remedies against intermediation bias must either ensure that the platform no longer has an incentive to engage in biased intermediation by separating ownership of the platform from the entity engaged in the downstream activities, or they must ensure that the platform no longer has the ability to produce matches which would harm users of the platform.

Factor-based and payment-based ranking mechanisms

It is useful to distinguish between 'factor-based' and 'payment-based' mechanisms when considering how digital platforms generate and display matches.

Factor-based mechanisms take observable characteristics of services or products and feed them into algorithms in order to produce relevant matches for users. Factors could be changed to bias results and divert users' attention to a vertically integrated platform's own services or products and away from those of downstream rivals, or the downstream affiliate might use its inside knowledge of the factors to obtain higher rankings on the platform.

'Payment-based' mechanisms take the size of payments made by businesses to the platform into account when generating results, with the highest bidder securing the highest ranking. In practice, most payment-based platforms also use factor-based mechanisms to ensure that results remain relevant and so are a hybrid of the two approaches. Payment can take many forms, but many platforms use complex auction mechanisms to determine prices. A downstream affiliate may be able to outbid its rivals and obtain higher rankings by having a better understanding of the auction mechanism or by being able to bid 'wooden dollars' which represent internal transfers rather than cash payments.

Structural separation

The incentive for a vertically integrated digital platform to engage in intermediation bias would be removed if that platform was prohibited from participating in any relevant downstream market. This would require the separation of any existing downstream activities from ownership of the platform itself, and restrictions to prevent the platform from participating in such markets in the future.

We do not consider this remedy to be the first best option, since it would involve foregoing efficiencies which might arise from vertical integration as well as likely facing significant legal and practical challenges. Specifying the assets and activities to be separated may be more difficult with digital platforms than with traditional network industries.

Structural separation may be a remedy of last resort if other remedies prove unviable.

Disclosure obligations

Concerns about factor-based mechanisms have led to calls for greater transparency and disclosure by digital platforms. Interventions which require platforms to disclose the rules or factors which their algorithms employ are intended to serve as a deterrent against abusive conduct and ensure that it could be detected when it occurred. We are not, however, convinced that disclosure will be sufficient to address concerns about intermediation bias. Aside from the difficulty of presenting the information in terms that anyone other than a few technical experts in large competitors would understand, it is unlikely that the impact of any particular set of factors on competition could be determined in the abstract, or that the intent behind the changes to algorithms could be discerned without access to internal documents. In addition, disclosure of intellectual property to competing platforms, who may then more easily replicate it, may weaken incentives for platforms to invest in continuing to improve the quality of matches and may encourage users to invest even more in efforts to 'game' the algorithm to improve their rankings. The extent to which these risks might outweigh the benefits of disclosure is not well understood yet.

Random allocations and quotas

An alternative or additional remedy would involve a competition authority determining how options are displayed on the platform, rather than leaving this to the platform itself. However, random allocation rules pose significant difficulties when the platform is aiming to present the best match rather than a range of options which are assumed to be close substitutes for each other. There are also questions as to how services are to qualify for the pool, how many should be drawn from it and how rules might need to be revisited as the market evolves.

An alternative approach involves the competition authority specifying which outcomes the factor-based mechanism intends to achieve. Changes that are made by the platform to address intermediation bias could then be assessed by comparing how the ranking of the

platform's own downstream services versus its rivals' is expected to change, or has in fact changed as a result.

Prescribing outcomes or setting quotas is difficult for a competition authority and may mean that users are presented with more inferior matches from rivals rather than matches which are less biased. It also creates opportunities for rivals to use the remedy process to improve their rankings by influencing the intermediation process. As a result, the remedy process risks becoming very protracted and contentious. In the absence of other ways to assess whether remedies for intermediation bias are effective, we suspect that competition authorities may rely, at least implicitly and to some extent, on some 'fair' market share benchmark when assessing whether a particular set of changes to a factor-based mechanism constitutes an adequate remedy, particularly if some form of restorative justice is being pursued.

Payment-based allocation

Payment-based mechanisms are already used by platforms in the intermediation process and, despite potential concerns about their impact under certain conditions, are widely accepted by competition authorities. We think they might also be adopted by competition authorities as a remedy to address concerns about intermediation bias. Under such arrangements, prices can be used to allocate scarce resources, rather than their allocation being determined by opaque factor-based mechanisms that are controlled by the platform itself. Downstream rivals who wish to improve their rankings can do so by simply bidding more.

Payment-based remedies may, however, raise a number of concerns. It may be objected that a firm that has engaged in unlawful practices should not adopt a remedy which provides it with additional income from its rivals, particularly if income is derived from the exploitation of a dominant or bottleneck position. A more practical concern is the 'wooden dollars' issue, which recognises that payments by the platform's own downstream affiliate are internal transfers rather than the cash outflows which rival bidders are required to make. This may give the affiliate an unfair advantage and allow them to consistently outbid, and hence outrank, their rivals.

If the payment-based remedy involves an auction, then competition

authorities will wish to ensure that the design of the auction is consistent with the outcomes they seek to obtain. Similar to the specification of factor-based mechanisms, this could involve ex ante appraisals and tests of the auction, or ex post adjustments if it fails to yield the outcomes that were expected.

The need for experimentation

Both factor-based and payment-based remedies involve significant challenges for competition authorities because it is difficult to predict whether the remedy will eliminate bias or what the impact will otherwise be for competition in the downstream market. Such predictions may need to be informed by trials or experiments by technical experts, either to assess the impact of changes to factors or of particular auction designs. Even then, an ex post assessment of the consequences of the remedy for competition in the downstream market may be needed, and this may require the adoption of some kind of benchmark or quota against which the outcome would be assessed.

We consider that payment-based remedies for intermediation bias may have a number of advantages and deserve further consideration by competition authorities. This work ought to be done before remedies are applied to a particular case.

We recognise that competition authorities may be reluctant to undertake their own remedy design and may prefer to rely upon proposals submitted by platforms, criticisms by rivals, or benchmarks or quotas which specify outcomes in the downstream market rather than directly addressing bias in the intermediation process itself. This seems unsatisfactory. Instead, we would urge public authorities to demand access to the same experimental data which the platform itself used when proposing any particular remedy. In addition, the authority should be able to direct the platform to run other experiments in order to assess their effect on outcomes. They might even involve their own staff in the experiments being undertaken by the platform. At the same time, a platform might submit experimental data before making changes to its factor-based mechanisms and obtain a 'safe harbour' ruling from the authority in return.

The sharing of experimental data in this way could significantly improve the quality and effectiveness of remedies for intermediation

bias, whilst also providing greater certainty and objectivity for dominant vertically integrated platforms that perform intermediation functions.

Such a new approach may require new institutional arrangements and changes to the existing legal framework in order to implement them, and might involve both competition authorities and existing or new regulatory bodies working together in a way that they have not generally done to date. Designing effective remedies for intermediation bias may require both ex ante assessments before they are introduced and ex post appraisals after implementation. It is likely to be a more iterative and a more collaborative process, informed by the scientific results of experiments, than anything we have seen undertaken by competition authorities to date.

Access the full report

INTERNET PLATFORMS AND NON-DISCRIMINATION

INTERNET PLATFORMS AND NON-DISCRIMINATION

Jan Krämer, Daniel Schnurr, Alexandre de Streel

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Online platforms are central parts of the internet ecosystem. However, recent studies and cases point to potential concerns with respect to discrimination in some platforms, for example in the paid prominence of third parties, or the favouring of a platform's integrated services.

Having considered the existing legal framework and the economic perspectives on forms and cases of discrimination, the report finds that there is not a sufficient basis for a general ex-ante non-discrimination obligation. However, there are valid concerns with respect to SMEs and long-term effects that warrant reinforcing existing rules against unjustified discrimination.

The authors therefore make a number of recommendations, beginning with improvements to both public and private enforcement. The report also recommends that the Commission, national authorities and courts provide clear guidance on the applicability of existing rules, to increase legal certainty.

Finally, the authors also consider a new proportionate obligation of transparency for the most important online platforms.

Context

This report evaluates whether non-discrimination obligations for online platforms are warranted from an economic and legal point of view. Thereby, the focus of this report is on online platforms that employ a multi-sided business model.

In its Mid-Term Review on the implementation of the Digital Single Market Strategy, the European Commission recognised the central role of online platforms in the internet ecosystem and emphasised that its policy will be aimed at "a level playing field for comparable digital services" and "keeping markets open and non-discriminatory to foster a data-driven economy". In particular, in its fact-finding exercise on platform-to-business trading practices, the Commission identified the "lack of transparency, e.g., in ranking or search results," as a key issue.

Based on several case studies encompassing operating systems, app stores, search engines, e-commerce platforms and ad-blocking, this report identifies (i) (paid) prominence of some third parties over others and (ii) the favouring of a platform's integrated services over independent entities as possible concerns across the Internet with respect to discrimination in online platforms. In the extreme, such discrimination may even take the form of blocking of specific third-party products, content or services. Within this scope, both the current legal framework that applies to online platforms at the EU level, as well as the insights of the economic literature regarding the welfare effects of discrimination with respect to prominence, are reviewed in this report.

Non-discrimination practices

Legal perspective

From a legal perspective, unjustified discriminatory practices are prohibited and transparency obligations are imposed under several EU rules already applicable to online platforms. Those rules may be: general, such as the competition rules, the internal market rules, and the consumer protection rules; semi-horizontal, such as the E-Commerce Directive; or sector-specific. Some of those rules apply ex-post while others apply ex-ante.

Economic perspective

The literature finds that discrimination in the form of paid prominence may often be in the interest of consumers. In the case where content providers' quality is pivotal, static efficiency is maximised if the platform can offer content providers paid prominence; in the other case, where content providers differ mainly by price, welfare results may reverse. In both of these cases, smaller or low-quality content providers are worse off if platforms can offer paid prominence. This gives rise to concerns regarding dynamic efficiency and long-term variety in those markets. Additional welfare losses may arise if platform operators are vertically integrated with content providers.

From a static efficiency perspective, the economic findings do not support a general theory of harm with respect to the considered discriminatory practices that would warrant a wide ex-ante application of a non-discrimination rule. From a dynamic perspective, a non-discrimination rule may be more appropriate, but currently there is a lack of economic research to thoroughly support this claim.

General rules against unjustified discrimination

Although the report finds that there is no sufficient basis for a general ex-ante non-discrimination obligation for platforms, there are economically valid concerns with respect to SMEs and long-term effects that would warrant additional safeguards for the enforcement of the general rules against unjustified discrimination. Thus, the policy framework should aim at making those general rules, such as competition law or consumer protection, more effective and the report makes several suggestions to this end.

First, preconditions that facilitate the effective enforcement of existing rules are highlighted.

To improve public enforcement, **the exchange of information, even confidential, between authorities should be facilitated**. Moreover, **interim measures should be used more often when legally feasible**. In order to strengthen private enforcement, the possibility to get **private damages in case of unjustified discrimination should be facilitated** and the **establishment of private voluntary resolution bodies arbitrating discrimination disputes should be encouraged**.

Second, the report stresses the applicability of existing rules to online platforms and suggests that the **Commission, the national enforcement authorities and, ultimately, the courts provide clear guidance on the applicability of these rules** with respect to discriminatory practices in order to increase legal certainty.

Third, to facilitate the enforcement of existing rules, the report discusses the imposition of a **new proportionate obligation of transparency for online platforms. Only the most important online platforms (e.g., based on revenues or active users) should be subject to such a transparency obligation**. Data collection should be done on a continuous basis in order to establish an empirical foundation for quicker and better assessment, and possibly enforcement, of competition issues. Moreover, the simple fact that such information is collected and readily available could act as a "coercive regulatory device". This may prevent unjustified discriminatory actions against content providers in the first place and foster effective competition between content providers on the platform in the long run.

Data should be collected by the Commission, which is the competition authority at the EU level. Specifically, information regarding the basis on which prominence is granted (e.g., in the case of sponsored search: bids submitted by the content providers, the platforms' quality assessment of the content providers, click-through rates, etc.) could be collected. Finally, the establishment of such **a new obligation should first be tried with self- or co-regulation. If that proves to be ineffective, however, the obligation could be foreseen more formally in codified law**.

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BIG TECH ACQUISITIONS: COMPETITION AND INNOVATION EFFECTS & EU MERGER CONTROL

BIG TECH ACQUISITIONS: COMPETITION AND INNOVATION EFFECTS & EU MERGER CONTROL

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There is concern in policy circles about the effects of mergers and acquisitions in the digital economy on both innovation and competition, and the fact that many of these transactions are unscrutinised.

This paper considers the common traits of digital platforms, the related types of innovation and the pro- and anti-competitive effects of acquisitions on both competition and innovation. Building on this, the authors suggest complementary notification thresholds based on transaction value, the market shares, or the characteristics of the acquirer. The choice among those options should be based on a cost-benefit analysis to ensure that only the acquisitions presenting the highest risks for competition and innovation are notified to competition authorities.

The paper also highlights the various theories of harm that may be considered, paying particular attention to innovation theories of harm. Among the recommendations to balance competition and innovation are that competition authorities should focus on potential, rather than existing, competition; that firms be allowed make an efficiency defence of a proposed merger; and that both the burden and standard of proof be updated.

Context

Over recent years, we have observed a wave of mergers and acquisitions in the digital economy. In parallel to these large operations, 'big tech' companies also buy many successful or promising start-ups on a very large scale. This paper looks at the characteristics of the digital economy and outlines the main issues raised by the effects of big tech acquisitions on innovation and competition. It reviews the main economic theories which analyse the effects of big tech acquisitions and discusses the implications of those theories on EU merger control, in particular regarding the notification threshold, the theories of harm, and the standard and burden of proof.

Most of these mergers were not reviewed by the European Commission or the national competition authorities as they were below the notification threshold, and the few which were reviewed were, in general, authorised without conditions. With the benefit of hindsight and a better understanding of the competitive forces in the digital economy, a two-fold debate is emerging among antitrust agencies and academics. This debate centres, firstly, on whether more big tech acquisitions should be reviewed by the agencies and, secondly, on whether additional or different theories of harm and proof should be developed.

The characteristics of the digital economy are many and different across business models and digital platforms, but we can identify at least four traits that are key and common to most digital platforms:

- conglomerate concentration due to massive network effects and market linkages within ecosystems;
- reliance on customer attention and data which are often monetised using advertisers through complex value chains;
- rapid market evolution and a high level of innovation due to rapid technological progress based upon a small set of capabilities (mainly data, computing power, skills, and risky and patient capital);
- uncertainty and unpredictability since innovation is often disruptive.

This leads us to the different types of innovations:

- Incremental innovation and breakthrough innovation both refer to technological processes that differ according to the prior state of the art: an incremental innovation marks a small step

forward (typically the improvement of a feature or characteristic of a technological paradigm), whereas a breakthrough innovation involves a significant technological jump (akin to a change of technological paradigm). For instance, adding slow motion or stop image capacities to a VCR is an incremental innovation; replacing VCRs with DVDs is a breakthrough innovation.

- In contrast, sustaining and disruptive do not refer to technological progress, but to the relationship between the innovation and the value network around it: a sustaining innovation takes place within the value network, whereas a disruptive innovation comes from outside of the value network and displaces it. To continue with the example given above, the replacement of the VCR by the DVD and later by Blu-ray can be considered as sustaining innovations, whereby the quality of domestic video recording and viewing devices has gradually improved. By contrast, video streaming has the features of disruptive innovation; we can observe that the value network has shifted, with streaming being central and DVD/Blu-ray becoming a niche market.

The effects of acquisitions on potential competition

Acquisitions may have negative effects on the competition by allowing the acquirer to eliminate competition through the acquisition of high-potential rivals which represent a threat.

Acquisitions can also have positive effects by facilitating an efficient transfer of inputs and innovation capabilities, such as technology or talent, between the acquirer and the acquired firm; thereby accelerating the development of innovations.

The effects of acquisitions on innovation

The effects on innovative entry

To some extent, the possibility of being acquired after entry stimulates innovative entry, and, therefore, encourages firms to innovate in the first place. One downside is that it could also lead to inefficient, opportunistic entry for a buyout.

The effects on the development of the entrant's innovation

A big tech firm may have an incentive to kill an acquired innovation when the cannibalisation of the sales of its existing products by the innovation is larger than the extra revenues it can earn from it (replacement effect).

Conversely, the acquirer may have stronger incentives to develop the innovation than the acquired firm when there are important supply-side and demand-side synergies between both firms' products and, therefore, the development and diffusion of the innovation can be accelerated through the acquisition. In this case, there is a possible trade-off between the acceleration of the development of innovation and the elimination of competition.

Effects of big tech acquisitions	
Anti-competitive effects	Pro-competitive effects
Effects on competition	
› Elimination of potential competition: the acquired firm offers a substitute. › Reinforcement of market leaders: if start-ups sold to them rather than to rivals.	› Synergies from the acquisition: input and output complementarities.
Effects on innovation	
› Innovation killed if the acquirer has less incentive to develop the innovation than the acquired firm. › R&D oriented towards maximisation of acquisition value rather than value of innovation, therefore, distorting the type of innovation that new ventures undertake.	› Stimulation of innovative entry, with possibly inefficient entry. › Innovation accelerated if the acquirer has more incentive to develop the innovation than the acquired firm. › Complementarities in innovation capabilities between the acquirer and the acquired firm: capital, skills/talent, data, other resources.

EU merger control: notification threshold

The current EU merger notification threshold – which is mostly based on the monetary turnover of the parties to the concentration – fails to capture the acquisition of high potential firms with no or low monetary turnover. However, big tech companies mostly acquire firms with no or small monetary turn-over as their acquisitions often take place at an early stage of development. At that early stage, digital firms focus more on the growth of their customer base than on the growth of their turnover and profit (e.g. because they want to be the first to benefit from network effects and because the market might tip in their favour). This is why the acquisition of Instagram by Facebook was not reviewed by the Commission and why, without the specific referral by national competition authorities, the acquisition of WhatsApp by Facebook would not have been reviewed by the Commission. Yet a start-up could represent a threat, and hence, there could be a pre-emptive motive behind the acquisition even if the entrant's revenues or profits are small.

To screen those acquisitions, complementary notification thresholds based on transaction value, the market shares, or the characteristics of the acquirer may be needed. The choice among those options should be based on a cost-benefit analysis to ensure that only the acquisitions presenting the highest risks for competition and innovation are notified to competition authorities.

Theories of harm

Horizontal and conglomerate effects

When technologies and markets evolve quickly, the potential competition captured by entry barriers is a better indicator of market power than the existing competition captured by market shares. Therefore, when reviewing big tech acquisitions, antitrust authorities should mainly analyse **whether the acquired firm constitutes a potential competitor and a significant competitive threat to the acquirer**.

Another solution is to move the competition analysis from the output/existing services of the acquirer and acquired firms towards the input/

innovation capabilities of both firms and **determine whether, after the merger, the merging firms will be able and have incentives to significantly impede competition on those input markets**.

Innovation theory of harm

When reviewing big tech acquisitions, competition agencies should assess:

- The risk of **reduction or even elimination of (potential) competition** when the acquiring firm gains more from maintaining its dominant position through the acquisition than the acquired firm can earn from entering the market.
- The risk of **elimination of the innovation that was being developed by the acquired firm** when the acquiring firm gains more from killing such innovation than by developing it.

To assess both risks, competition agencies may mainly look at (i) the **degree of substitutability or complementarity between the existing and future products** of the acquired firm and those of the acquiring firms and (ii) the **degree of synergies between the innovation capabilities** of the acquired firm and those of the acquiring firms. When there are strong complementarities between products and/or strong synergies between innovation capabilities, big tech acquisitions may lead to a decrease of competition coupled with an increase of innovation. As a result, competition authorities may also have to arbitrate a **trade-off between competition and innovation**.

Innovation can be sustaining or disruptive and incremental or breakthrough. Antitrust authorities may also **arbitrate between the types of innovation** they want to promote.

Efficiency defence

Given the importance of synergies and complementarities between the input/capabilities and output/products of some big tech acquirers and the acquired firms, as well the broader effects on entry (entry for buyout), **the efficiencies generated by big tech mergers may be important**.

However, the efficiency defence is notoriously difficult to bring into an EU merger review, since efficiencies are often analysed sequentially after anti-competitive effects have been proven by the Commission. This is particularly problematic in the digital industry where uncertainty is high and where the three conditions of an efficiency defence may be very difficult to prove.

Therefore, as many authors have suggested, the **efficiencies should be analysed simultaneously with the anti-competitive effects and not sequentially** after the harm analysis.

Competition authorities should focus more on potential competition than on existing competition, look at the effects of the merger on innovation capabilities, and inject horizontal elements into the conglomerate theories of harm.

Competition authorities should also assess the effects of mergers on competition and on innovation separately, as these two dimensions are not necessarily positively correlated. To assess both effects, authorities should focus in particular on the degree of substitutability or complementarity between the existing and future products of the acquiring and the acquired firm, and the degree of synergies between the innovation capabilities of both firms. Finally, the efficiencies of the acquisition should be analysed at the same time as the anti-competitive effects and not afterwards.

Antitrust decision under uncertainty

Standard of proof

Currently, the **standard of proof is the same for the European Commission to either authorise or prohibit a merger**. This standard of proof relates to the **most probable post-merger** market evolution.

Several policy reports and academic contributions are recommending that the Courts adapt the standard of proof and **move from a 'more likely than not' standard to a standard that takes the risks and the costs of antitrust errors equally into account**.

Finally, in the administrative practice of antitrust agencies and the case-law of the Courts, there is a link between the standard of proof and the robustness of the theory of harm. Indeed, if an innovation theory of harm is more likely in the case-law as mentioned above, the standard of proof of antitrust agencies is enlarged.

Burden of proof

Currently, there is no presumption of legality or illegality in the Merger Regulation. Few big tech mergers have been reviewed by competition agencies and even fewer have been analysed ex-post. The economic theories to analyse their effects are just emerging. Therefore, at this stage, it may be difficult to base legal presumptions on existing antitrust practice and robust theories. However, the asymmetry of information on technology and market evolution between big tech firms and antitrust agencies is probably higher in the digital industries than in others.

Reversibility of decisions and remedies

The very high uncertainty in technology and markets evolution should affect both the standard and the burden of proof. Regarding the former, Courts, followed by competition authorities, could move from a 'more likely than not' standard to a standard that takes the risks and the costs of antitrust error equally into account.

Regarding the latter, rebuttable presumptions can be justified to reduce transaction and adjudication costs when they are based on the previous stock of legal cases and/or robust economic theories, or to allocate information disclosure incentives.

Another – and possibly more radical – way to deal with market uncertainty is to ensure more reversibility in merger review and remedies. One way in which to do this would be to allow an **ex-post revision of the merger review based on Article 102 TFEU** when market evolution shows that a big tech acquisition has significantly impeded effective competition. It has the advantage of relying on post-merger information to revise the merger decisions but the drawback of increasing regulatory uncertainty.

Another option would be to require the merging parties to propose, at the time of the merger, a confidential **future divestiture plan** to antitrust agencies, to be implemented if the market evolution shows that the merger significantly impedes effective competition.

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MAKING DATA PORTABILITY MORE EFFECTIVE FOR THE DIGITAL ECONOMY

MAKING DATA PORTABILITY MORE EFFECTIVE FOR THE DIGITAL ECONOMY

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Current EU legislation contains a number of rules designed to promote or impose the portability of personal and non-personal data, most notably in Art. 20 of the General Data Protection Regulation (GDPR). Despite this, many areas of uncertainty exist in the legislative framework and much more can be done to make data portability more effective.

This report begins with a detailed technical analysis, which notes that there are no strong technical challenges to providing continuous data exports. In the subsequent economic analysis, the authors find that data portability is unlikely to lead to greater or less competition and innovation in established digital markets per se, but it may spur innovation in complementary and new markets.

The report concludes with a number of recommendations including: increasing the legal certainty on the scope and limits of data portability under GDPR; providing greater transparency on the categories and extent of personal data that firms hold on a certain data subject; and investigating the feasibility of rules that would require large gatekeeper platforms to offer continuous data portability through APIs for both personal and non-personal data.

Context

This CERRE report scrutinises the economic aspects of data portability in the context of the digital economy, against a background of legal and technical considerations. In particular, the report looks beyond the current requirements of data portability, as provided for by the GDPR. It critically assesses whether additional legal requirements, such as a right to continuous access to personal data, would provide complementary tools for making the right to portability more effective and for establishing an innovative, competitive and fair data ecosystem that benefits all players.

The legal dimension: EU regulatory framework on data portability

The current EU legal framework contains a number of rules that encourage or impose the portability and the sharing of personal and non-personal data. **Some of these rules are horizontal. For personal data, they are covered by the *General Data Protection Regulation* (GDPR) and *competition law*. For non-personal data, they are covered by the *Digital Content Directive* applicable in a B2C relationship and the *Free Flow of Data Regulation applicable in a B2B relationship, as well as competition law*. The others are sectoral and impose data sharing or portability**. In particular, this includes (i) the financial sector, with the Second Payment Service Directive (PSD2), which imposes access to payment account data (and which has been completed in the UK through the Open Banking Programme); (ii) the automotive sector, with the new Motor Vehicle Regulation imposing access to some vehicle data; and (iii) the energy sector, with the new Electricity Directive imposing access to some customer data.

The European Data Protection Board (EDBP) notes that the right to portability, according to **GDPR Article 20, should be interpreted broadly and should cover both volunteered data** (actively and knowingly provided) and observed data, but not inferred or derived data. However, it remains to be seen whether EU judges will embrace such a broad interpretation. If it is followed, web tracking and clickstream data should also be covered by the right to portability. However, currently these are not routinely included in the data sets

that consumers can download pursuant to exercising their right to data portability.

Tensions can emerge within the GDPR as the right to portability of personal data promotes the exchange and reuse of data whilst its principles - purpose limitation and data minimisation – tend to limit data sharing. In practice, this means that these principles need to be considered when implementing the right to data portability and need to be articulated prior to the porting of the data. Indeed, the EDBP recommends that the data seeker should inform the data subjects on the purposes for which the ported data will be processed and on the categories of personal data that are adequate, relevant and necessary for these purposes. This will help prevent a breach of these purpose limitation and data minimisation principles. Moreover, if the data seeker realises that more data than necessary were ported for the required purpose, they will have to delete this excess data as quickly as possible to avoid any liability issue.

Some industry stakeholders have raised concerns that data portability may create a **liability issue if the data is misused by the recipient**. The EDBP has also indicated that, insofar as the data giver responds to the request for portability, it acts on behalf of the data subject and should not be responsible for any later infringement potentially committed by the data recipient. Nevertheless, according to the EDBP, the data giver should still establish certain safeguards, such as internal procedures to ensure that the data actually transmitted matches that whose portability was requested, in respect of the purpose limitation and data minimisation principles.

A more contentious issue around data portability arises with requests relating to **personal data from other data subjects**. Article 20(4) of the GDPR provides that the portability right should not affect the rights of others. Indeed, while the data subject of the portability request may have given their consent to the data seeker, or may have concluded a contract with them, this is not the case for the other data subjects whose data could be ported as a result of the exercise of this right. Therefore, the consent of the other data subjects would be required in order to be able to port such data, which significantly complicates consent management.

From the sector-specific provisions on data portability, the PSD2 is the most relevant and interesting in the present context. This is because

it complements and extends the B2B portability right under Article 20.2 of the GDPR by compelling banks (the original controllers) to allow direct transmission of the data subjects' personal banking information to third party providers (payment initiation services or account information services). PSD2 goes further than the GDPR because, on the one hand it forces the banks to ensure the technical feasibility of this B2B financial account data portability, while on the other it makes this portability continuous, as data subjects can request personal data at each transaction, facilitated by APIs.

The technical dimension

From a technical perspective, we highlight the **various data models and formats** commonly used in the digital economy. These formats can be roughly categorised as structured, semi-structured and unstructured data. In both the structured and semi-structured cases, file formats only specify a syntactic layer on how information is represented. To make sense of it, it is necessary to know the schema of the data, i.e. what fields and data attributes exist, and what constraints on the data values should be respected. Beyond the syntax (provided by the file format), the schema and the constraints (given by the schema annotations, when available), data needs to be interpreted with respect to specific semantics, which give meaning to data fields and attributes. When data is exchanged between two data controllers using different schemas, it is necessary to transform it from one schema to the other, using schema mappings from the source to the destination. These schema mappings are, most of the time, hand written by data engineers, although there is sometimes the possibility of automated learning from examples.

In almost all cases, **the data needs to be (very) efficiently accessible upon request**. This is true whenever data may be used by the data controller in real-time applications, e.g. for display when a web page is accessed. This means any data item of interest needs to be retrievable with a latency in the order of one second or less. Although traditional SQL systems remain by far the dominant data storage mode, most large technology companies have switched from traditional relational database systems to **NoSQL systems**, which focus on performance, reflecting their extreme needs in terms of latency, data volume, or query throughput. In addition to the core data storage system, there is also often an additional caching layer that

stores responses in the main memory in order to react more quickly to common queries.

A **web service, or API**, is a technical interface for accessing data that is meant to be used by programmes - in particular by third-party software - to introduce novel applications of the data. Although there is no requirement to offer such APIs, they are already commonplace as they allow data controllers to specify what type of access third-party software can have. They even offer the possibility of monetising richer forms of data access. In order to be used for accessing personal, potentially private, data, API use needs to be combined with an access delegation protocol. This verifies that the call to the API has been authorised by the user whose data is being accessed. The most-commonly used protocol is OAuth 2.0. The output of APIs is usually in the format of JSON files in a wide variety of schemas, with little to no standardisation between companies.

With respect to data transfer, **Personal Management Information Systems (PIMSs)** act as a separate data controller, with direct exchanges from external data controllers to the PIMS. A PIMS may also offer the possibility of pushing the data to other data controllers, in this case acting as a third party between the source and destination data controllers. The PIMS can initiate API calls, control access tokens and implement schema mappings. It is therefore crucial that the user fully trusts the PIMS.

Technical solutions for standardised data exchange remain in their infancy. Noteworthy projects include Solid and the Data Transfer Project (DTP). The DTP is a technical initiative launched in 2018 and is supported by - amongst others - Apple, Facebook, Google, Microsoft and Twitter. The main aim of this initiative is the development of a specification of an open-source platform for data transfer. Although these five companies are nominally involved, the project builds on Google's former Data Liberation Front, and Google is by far the main contributor to the DTP platform. When compared to other successful open source projects, both Solid and DTP are still at an early stage of development and have progressed little recently.

We claim that, **in general, there are no strong technical challenges to providing continuous pull- or push-based data exports with limited delay**, as long as specific solutions are implemented for large, unstructured data sets. The fact that large data controllers

provide similar (but incomplete) features through APIs means there are no particular obstacles to implementing them. However, in order to better exploit exported data, data controllers should aim for greater standardisation of data models (e.g. using common RDF schemas). Currently, data exchange capabilities are impeded by the problem of schema heterogeneity. However, assuming this problem can be resolved (either by standardising the data export models or by manually compiled schema mappings), they represent a manageable technical challenge. Data exchange through a trusted third-party (as in a PIMS or the DTP where the hosting entity is on a trusted external host) has the advantage that there is no need to provide access tokens to the original data controllers.

The economic dimension: impacts of data portability on innovation

From an economic perspective, although data consumption is non-rival, **observed user data collection (as opposed to volunteered user data) is rival**. This is because for key services (such as search, or social networking) the market is concentrated such that only a few firms are able to track user activity across the web. Thus, observed data is not ubiquitously available, and it is also usually neither feasible nor socially desirable to duplicate the collection of the same observed data. This would mean that users would have to conduct the same search, the same post or the same purchase on several platforms, leading to even more web trackers being built into the websites that we visit. Thus, although rivalry in data collection is not a problem per se, it does provide a strong rationale for sharing data.

The more prevalent sharing of 'raw' user data will likely render the market for data intermediaries - which simply acquire and sell raw data, but do not offer further advanced analytics on it - more competitive and possibly unprofitable. However, this does not destroy the incentives to compete on the basis of data-derived insights. **Indeed, as raw data becomes more prevalent, the focus of competition is likely to move from collection to analytics, which is more likely to stimulate, rather than stifle, innovation**. Furthermore, as data collection is highly concentrated and the services through which (observed) data is collected usually exhibit strong network effects, stronger competition at a data analytics level seems much

more feasible and desirable than at the data collection level.

Having access to greater quantities of data (e.g. both volunteered and observed data) will, in many applications, yield a better quality of inferred data (i.e. the actionable knowledge) and thus offer higher profit opportunities for firms. Therefore, the application scope of data portability - i.e. whether restricted to volunteered data or encompassing observed data too - is also crucial from an economic perspective.

Data portability lowers switching costs and facilitates multi-homing. Moreover, widespread data portability, particularly if it occurs on a continuous basis and includes observed data, can facilitate algorithmic learning outside of the organisation where the data was created. The advantage of data portability is that personally identifiable data can also be transferred, and thus there is no trade-off between competition and privacy, which is inherent to access requests that are not user-initiated. At the same time, however, it is unlikely that all users will initiate a transfer of their data. Thus, the data set that is ported under data portability is likely to be more detailed on specific data subjects, but less representative of the user base as a whole. Whether such a data set is useful for a competing or complementing firm is context specific and depends on the extent to which consumers make use of data portability. However, data portability does not alleviate consumer lock-in due to network effects; this would require some form of interoperability of services.

Irrespective of the extent and mode of data portability, **we do not think that data portability will lead to greater or less competition and innovation in established digital markets per se. It may, however, spur innovation in complementary and new digital markets**. Widespread data portability could make it possible for innovation at the service level and innovation at the analytics level to occur independently, i.e. within different organisations. Thanks to the non-rivalrous nature of data, this would mean that the current data controllers would not lose access to the data, and could thus continue to be innovative at both the service and the analytics level. This lends itself to the hypothesis that user-induced data portability may increase the innovativeness of digital markets, rather than stifle it. However, although there is some tentative empirical evidence from Open Banking in the UK, currently there is a lack of empirical studies testing this hypothesis or other economic effects specific to data portability.

The economics of Personal Information Management Systems (PIMSs)

The central premise of a **PIMS for users is that it offers a centralised dashboard** that seamlessly integrates with the various services that they are using, offering key functionalities such as identity management, permission management and data transfers. This **requires a common set of de facto standards and high-performance APIs**, through which a PIMS would be able to access the various services and users' data. To date, however, such common standards are lacking.

Furthermore, even if we look beyond the need for standards and API access to connect the various data sources of a user in a centralised PIMS, the question arises of **how the business model of a privately-financed 'neutral' data broker can ever be made sustainable**. We find that common business models which seek to generate revenues from: i) data markets by selling users' data, ii) users directly, via a subscription model, or iii) data controllers by offering a compliance service are either not feasible or are unlikely to see widespread adoption. Specifically, a number of PIMSs that set out to monetise personal data on behalf of their users have failed in the recent past. Paying users for their data also gives rise to an ethical issue, as such a practice would quickly reveal that the data of some users is more valuable than others.

Increasing the effectiveness of data portability

To date, there is limited evidence that data portability is widely used in digital markets, and thus there is scope to make it more effective. To this end, we have developed policy recommendations in three areas.

More effective enforcement and legal certainty on existing legal frameworks for data portability

Here, a first priority for policymakers is to **increase the legal certainty on the scope and the limits of data portability** under Article 20 of the GDPR in the context of digital markets. In particular, it should be clarified to what extent observed data - including tracking and clickstream data - is to be included. It should also clarify whether there is an obligation to ask consumers for consent regarding the

transfer of other data subjects that may concern them.

We realise that at some point, these questions can become so complex that a case-by-case analysis will be necessary. Here, it should be clear what the main interests of the trade-offs are and where organisations and consumers can find legal guidance on balancing those trade-offs in a timely manner. In these cases, providers that are willing to facilitate data portability for consumers should be able to receive specific guidance from the privacy regulator in a cooperative approach. In this context, it is also worth discussing the use of sandbox regulation, as is the case in Open Banking, in order to provide a safe harbour under which data portability can be further developed.

A second priority is for **greater transparency on the categories and extent of personal data** that firms in the digital economy hold on a certain data subject. This information should be readily available to users before any formal access request (Art 15(3) GDPR) or data portability request (Art. 20 GDPR) is initiated. Data subjects already have these rights under Art. 12 – Art. 15 GDPR, but currently there still seems, in some cases, to be a lack of transparency over the actual extent of data collection pertaining to each data subject (e.g. on the extent of tracking data).

A third priority is for **more effective monitoring and enforcement of the existing provisions on data portability** under GDPR. This requires that the scope and the limits of these provisions are clear in the context of the digital economy (primary priority), and that users are well aware of which data is available about them and can be ported (secondary priority).

Enabling consumers to transfer their personal and non-personal data in a timely and frequent manner

We argue for **investigating the need and feasibility of a new, proportionate rule that enables consumers to transfer their personal and non-personal data in a timely and frequent manner** from their existing digital service provider to another one at any time. This is what we refer to as 'continuous data portability'. As there is a possibility that such a regulation amplifies the legal and economic risks and trade-offs inherent to data portability, it is vital that the previously raised legal uncertainties are thoroughly addressed in advance. The scope of data to be ported under such continuous data

portability should match that under GDPR Article 20. Moreover, in accordance with the proportionality principle, the obligation to implement and enable continuous data portability should only apply when the benefits are likely to outweigh the costs; it should not be overly burdensome for small and emerging digital service providers.

Continuous data portability requires a dialogue and code of conduct on common data standards and APIs. We believe that standardised APIs that enable continuous data portability are a prerequisite for encouraging more firms to import personal data, and for encouraging more consumers to initiate such transfers. Ultimately, this is likely to spur innovation and competition in digital markets, although it is unlikely to disrupt existing market structures.

This will echo ongoing policies in the UK and Australia, and we believe that the European Commission - in its Data Strategy - should follow suit. We therefore propose first attempting a participatory, adaptive and soft approach, similar to what was done in the Free Flow of Data Regulation. If there is insufficient progress made in establishing standards and operational interfaces within a specified period, it may require stronger governmental intervention or guidelines to ensure progress is made and that neutrality of interests are warranted, as was the case for PSD2 and Open Banking.

Enabling centralised consent management through PIMS

To enable a centralised consent management through PIMS, additional standards need to be agreed above and beyond those needed for data transfers. We think that the importance of this should not be underestimated, because it is crucial that consumers are aware of their given consents and are able to exercise their rights with little to no transaction costs, particularly if this is the basis on which data is being shared between firms.

We also expect that, if such standards are in place, there will be considerable **development in open-source communities**, providing decentralised, non-profit solutions. Given the potentially sensitive nature of the data being handled through PIMS, public oversight may still be necessary, such as through **privacy seals and certification**.

To achieve critical mass for PIMSs, one fruitful avenue may be to build a user base from existing (or developing) identity management

solutions. In particular, the EU could be more active in **encouraging PIMSs by coupling development of its consent standards more closely** to its ongoing efforts for a joint European identity management solution.

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THE ROLE OF DATA FOR DIGITAL MARKETS CONTESTABILITY: CASE STUDIES AND DATA ACCESS REMEDIES

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Data plays a central role in the business models that shape competition and innovation in digital markets. This report analyses the processes that turn data into economic value in three case studies: online search, e-commerce and media platforms.

In all three cases, the authors find that more data, especially data on user behaviour, gradually improves the quality of the digital service, generating large economic benefits for the platform. This positive feedback loop leads to data-driven network effects that create high entry barriers.

Having assessed and clarified the underlying theory of harm, the authors argue that, as a policy goal, contestability in the narrow sense is neither a realistic nor necessarily a desirable objective. They argue that policy makers should focus on enabling niche entry and niche growth and a level playing field for competitors in new and emerging markets.

The authors go on to assess remedies that might limit the collection of user data or that might facilitate access to broad user data through bulk-sharing, and make specific policy proposals on broad user data sharing in the three case studies.

Context

This report analyses the central role of data as an input for the business models that shape competition and innovation in digital markets. By reviewing current data collection practices and the technical processes that transform data into business value, the report sheds light on the economic impact of data in the three cases studies i) online search, ii) e-commerce and iii) media platforms. Based on the insights from these use cases of data, the report considers policy proposals for data access remedies devised to safeguard competition, innovation and the openness of the digital ecosystem, especially for new entrants.

In this context, the report discusses the harms and benefits of data aggregation, and the goal of digital markets contestability through improved data access for third-parties. It also highlights the economic trade-offs that policy makers face when considering data access remedies to promote competition and innovation in the digital space.

Case studies on online search, e-commerce and media platforms

The first part of the report reviews three highly popular services in digital markets. Each case study analyses the collection and use of data and highlights the economic benefits and competitive advantages that can be derived from data. In particular, the report shows that, in all case studies, the ***breadth* and *depth of data* are important determinants of the quality improvements and economic value** that can be derived from data. A broader data set means that information on more users is available, i.e., the data set is more representative and contains on average more data per item. In contrast, a deeper data set refers to the length of the user profiles, i.e., on average there is more data available on each individual user.

Online search

The first case study highlights how search engines rely on the collection and processing of data resources to retrieve relevant information from the distributed content and documents of the World Wide Web. Here, data plays a key role in improving the quality of search results,

which is mainly determined by the ranking decisions of a search engine.

The ***search index data*** that is collected represents the basis for the matching of users' search queries to relevant websites. Completeness and freshness of the web index data determine the set of search results that can be retrieved by a search engine.

Search query data provides the basis for improving search quality by understanding users' search intent and providing them with suitable results. **Combined with observed *data on user behaviour*, search query logs are used to analyse the implicit quality feedback** given by users' observed decisions and actions on the search engine platform. Collection and analysis of this data is used to improve the ranking decisions and the matching of search queries. Moreover, **personally identifiable *individual user* data** can be used to infer the context of a search request and thus to improve search quality **by personalising the ranking of search results**. User profiles may be created from observing user behaviour on the search engine website, but also from ***tracking user activity*** on other services and in other domains.

Additional ranking information may be retrieved by analysing the similarity of user profiles and their past behaviour. Collection of ***geographic tracking data*** extends the depth of user profiles by including information on user behaviour in physical environments, which is especially relevant for the quality of local search results.

Ranking criteria based on the accuracy and completeness of third-party-contributed information may **create incentives for businesses to create *third-party business data* directly on the search platform**. In addition, search engines as intermediaries may collect data on interactions and transactions carried out between users and businesses on their own platform. This data can be used to improve search quality, but also in other markets where the search engine is active. Moreover, search query data and data on user behaviour can increase the effectiveness of ***search advertising***, and tracking the effectiveness of advertising on third-party websites can give a search engine access to additional data on user behaviour.

E-commerce

This case study analyses the role of data with respect to (i) ***demand***

forecasting, and for (ii) ***recommendation systems***.

Aggregated sales data serves as the main input for demand forecasting, which allows retailers to develop their product portfolio according to observed consumer tastes and also to save costs by promoting efficient logistics, optimal warehousing and automated order systems.

As operators of ***digital marketplaces***, online retailers are in a special position to **observe *data on third-party businesses***, especially behavioural data on user-to-business interactions and purchasing transactions from these businesses. Based on this data, the efficiency of the overall marketplace can be improved, but the access to this data may also give the marketplace operator a competitive advantage if it competes directly with these third-party businesses.

Large product catalogues with numerous items per product category; the nuanced differentiation between items; and the availability of a wide set of niche items renders ***product discovery*** a major task for online retailers when it comes to converting shoppers into actual buyers. To provide users with automated product recommendations, ***data on the user base and the product catalogue*** are necessary inputs. To derive **personalised recommendations** that accurately reflect individuals' interests and preferences, state-of-the-art recommendation algorithms rely on both ***explicit feedback data*** in the form of volunteered product ratings and ***implicit feedback data*** in the form of observed user behaviour.

To overcome the **cold-start problem** of recommendations systems, a minimum amount of feedback data on each individual user and product are required. ***Data on product characteristics*** and ***user attributes*** can help to mitigate the cold-start problem, but contain complementary rather than substitutable information on behavioural user feedback data. Therefore, the continuous collection of feedback data is central to gradually improve recommendation performance. **As a by-product of user behaviour, implicit fine-granular feedback data is collected** on a continuous basis and at relatively low cost by retailers that already serve an active customer base.

Moreover, ***cross-domain data on user behaviour*** from other services can be used to infer more general preference patterns of individual users and to identify new similarity relationships across users. With respect to the role of data for **personalised recommendations**,

it is important to recognise that additional user feedback data does not only improve the quality of recommendations derived for the respective individual whose data is collected, but also exerts a ***positive externality* on the accuracy of recommendations for other users**. This positive externality of additional user data can give rise to ***data-driven network effects***.

The search for new user data and the need for deeper user profiles may incentivise large online retailers to enter new markets. Based on the access to online retailing data resources, in combination with a well-developed computational infrastructure and technical expertise, data-rich e-commerce incumbents may indeed be in an advantageous position to **enter other existing or emerging markets**.

In e-commerce, **data-driven quality is not the single dimension along which firms compete** for consumers. Notwithstanding, the case study highlights that **data indeed plays an important role in establishing competitive advantages within e-commerce markets**, and this advantage is likely to grow with access to more data. Thus, data can indeed raise entry barriers for new competitors.

Media platforms

Among media platforms whose service is based on the delivery of content to users and who have some level of responsibility for that content, there are **four main business models**: public service media, subscription, advertising supported and freemium. There are **two main purposes in the collection and use of data**: (i) capturing and retaining users, or in other words ***contributing to the appeal of the platform***, and (ii) ***selling advertising inventory***.

Maintaining appeal centres on ***personalisation and service improvement***. Identifiable personal data is combined with insight from a breadth of aggregate data and with non-personal data on content for personalisation. Improving service can be about interfaces and functionalities and also about improving content choice and/or organisation or even informing content production. One element of service quality is the level and nature of consumer protection, such as from illegal or harmful content, which depend on content data and on volunteered data from users.

Although untargeted advertising exists, most advertising on media platforms belongs to one of the **three main types of targeted**

advertising, each of which is highly data intensive. ***Contextual advertising*** has become highly sophisticated and can involve deep non-personal data on content. It also involves a certain amount of pseudonymised personal data linked to each campaign used to verify impressions and measure the effectiveness of ads. The other two types primarily use data to predict the potential effect of advertising. ***Segment-based advertising*** relies on the insight generated from broad pseudonymised or anonymised and aggregated data from a variety of sources to create audience segments, and then uses deep personal data to identify users belonging to those segments at the ad serving level. In ***behavioural advertising***, prediction and thus targeting is based on detailed user profiles drawing on deep data from the observation of identifiable individual users and inferences about them.

There is a privacy motivated push-back on ***user tracking*****, especially through third-party cookies and fingerprinting. Access to (and consent to use)** ***first-party data*** **is a valuable asset**. Tools for trading advertising on the open web will likely be replaced by in-ecosystem tools that use first-party data. Media platforms that do not have large ecosystems generating depth and breadth of personal data with the accompanied consent are under pressure to ***enable consent to third-parties*** used by advertisers in order for their inventory to be recognised by demand side tools.

Observed behavioural data is aggregated to feed into metrics that ***measure the effectiveness of campaigns***, such as basic impressions that indicate reach, click through rates (CTR), conversion rates (CVR), and other post-exposure behaviour metrics that are tracked for each campaign. For media platforms the ability to collect and use this kind of data on user interaction with the advertising they carry is crucial for establishing the value and demonstrating the efficacy of their inventory. The trade in advertising on media platforms generates a ***breadth of non-personal transaction data***, especially when it involves real time bidding. This data is then used to inform future bidding strategies of demand side actors. When they have access to it, it can also inform the selling choices of the media platforms supplying inventory, such as setting floor prices. In the longer term, planning and prioritising advertising business ***depends on a continual flow of data into advertiser key performance indicators (KPIs)***, which are largely derived from the integration of ***campaign and transaction data***, so non-personal and aggregated

personal observed and inferred data. Not having access to continual streams of this data can disadvantage some existing media platforms and may give rise to a cold-start problem for new media and content offerings.

The economic value of data

As illustrated across the three case studies, data is at the core of digital services today. For all markets surveyed, we conclude that more data, especially ***more data on user behaviour, will gradually improve the quality of the digital service, albeit at a decreasing marginal rate***, and allow the firms to generate higher economic benefits along various business value dimensions. This positive feedback loop is what characterizes data-driven markets and leads to ***data-driven network effects*** **that create high entry barriers** for firms that do not have access to such data. Although in all three markets it is feasible to enter with a basic service that does not use (behavioural) data, such a service would often be insufficient to attract users and to grow a viable customer base.

With respect to scale and quality advantages, the considered case studies demonstrate that **data is often created as a by-product of consumers' usage of a service**. The scale of operations therefore directly increases the ***breadth of data*** that is available to a firm. We show that empirical investigations point **to positive but diminishing returns from broader data sets**. When collected data can be associated with individual users, this increases the ***depth of data***, i.e., the average length of a user profile increases and more information per user becomes available. Longer user profiles may play an important role with regard to the economic benefits of increasing data scale. On the one hand, additional user information may yield direct improvements with respect to the performance of algorithms, although marginal benefits diminish with larger depth. On the other hand, **additional user data may reinforce the benefits from broader data sets**. This is because user data does not only benefit the performance of algorithmic tasks targeted at this individual user, but also improves the performance of tasks targeted at other users who are identified as similar users, based on the individual-level data. This may give rise to data-driven network effects even in the absence of increasing returns to scale.

Next to the scale of data sets, the ***quality of data*** **significantly influences the economic value** of data that can be extracted. Moreover, quality requirements will determine the competitive ramifications if firms have unequal access to data. Specifically, the ***timeliness of data*** is important to consider, as consumers' preferences change over time and new relevant items such as products or websites appear in the respective business context. In cases where data outdates quickly, the incumbency advantage of directly observing user behaviour will be especially relevant.

Finally, we highlight that the analysis of data-driven competitive advantages must consider the ***complementary inputs*** that are required for the collection and processing of data. In particular, this comprises **computing and storage infrastructure, skilled human resources and algorithms**.

A data-driven theory of harm

We then assess and clarify the underlying theory of harm with respect to data aggregation and data exclusiveness. At its root is the presence of **data-driven network effects**, which likely leads to the tipping of a market such that only one dominant provider prevails, and which creates high entry barriers. In a **tipped market, innovation incentives** of both the incumbent and potential entrants are likely to be lower than in a competitive market. Moreover, data-driven network effects also give rise to a ***domino-effect***, which allows data rich incumbents to enter into adjacent markets, thereby increasing their ability to collect data even more. This is facilitated by **envelopment strategies**, whereby existing services are bundled with the new service.

In particular, ***ancillary data services*****, such as digital identity management services, web analytics services, or financial transaction services may be viewed with scepticism**, because they allow the collection of even more data across otherwise unaffiliated third-party services. However, in this case providers of such ancillary data services are not competing and innovating in these markets themselves. Additional harms with respect to data access may arise in the context of ***vertical relationships***, e.g., when firms are providing both a platform, and act as a provider on the platform. Finally, there is also increasing evidence that data-driven network

effects and associated entry barriers have a **negative impact on venture capital** for innovative start-ups that seek to contest the business model of data-rich incumbents. The reason is that such start-ups often find themselves in a 'kill zone', where they are driven out of the market either through the incumbent's lower marginal costs of innovation (caused by data-driven network effects) or through acquisition.

Data-driven network effects also bear **inherent *efficiencies*** that must be considered prior to any policy intervention. Realizing economies of scale and scope in data aggregation, which create entry barriers on the one hand and generally benefit consumers on the other hand, allow the identification and development of products and services that cater to a consumer's individual needs and preferences. This creates efficiencies that would not have been possible otherwise.

Policy objectives: contestability, essential data and niche entry

We argue that **contestability in the narrow sense**, i.e., replacing the incumbent with a more efficient entrant in a process of 'creative destruction', is neither a realistic nor necessarily a desirable policy objective. Even if access to (user) data is facilitated through policy interventions, significant data advantages will remain with the incumbent, not the least because deep personal data is not sharable without a user's consent. Hence, we suggest that policy makers should focus on **enabling *niche entry and niche growth and a level playing field* for competitors in new and emerging markets**.

In this context, we suggest that the discussion of **'essential data' may be futile because 'essential data' in the meaning of the essential facilities doctrine often does not exist**. Market entry is possible without access to proprietary behavioural user data and can be based purely on publicly or otherwise commercially available data. However, in practice, ***access to such behavioural data* would be necessary in many instances to offer a competitive service or to develop data-driven innovations in other domains**.

Data remedies limiting the collection of user data

We review different possible data remedies that aim at limiting the collection of user data with respect to their technical feasibility and the economic trade-offs involved. These remedies include:

- Data siloing (i.e., preventing aggregation of data originating from different services),
- Shorter data retention periods,
- Prohibiting incumbents from buying into default settings,
- Line of business restrictions, and
- Privacy enhancing technologies.

The general problem with these sets of remedies is that they seek to **achieve a more level playing field in the digital economy by breaking the data-driven network effects** of data-rich incumbents. This diminishes the efficiency of the incumbent and thus also diminishes the ability to create value from data more generally. From a mere economic perspective, we argue that many of these remedies would not be effective in fostering competition and entry in digital markets, although data minimisation may have value in its own right from a privacy perspective.

Line of business restrictions, including vertical separation, may be considered by policy makers under very specific conditions, and as a remedy of last resort if data sharing remedies should prove to be ineffective. In particular, we suggest that policy makers should consider the possibility to ***restrict the use of ancillary data services by incumbents***, in so far as they allow the tracking of user behaviour across the entire Internet, e.g. identity management services, financial services or web analytics services. Such services make it very difficult for consumers to truly control to which firm they are providing their user behaviour data, and they undermine exclusive data advantages of niche competitors, which may help them to grow and scale. Moreover, such ancillary data services may often be provided by independent third-parties in a similar way, and with relatively little, if any, efficiency losses.

Finally, ***privacy enhancing technologies*** **should generally be part of the regulatory toolkit**, but must be tailored to the specific use case and must generally be accompanied by other remedies.

Data remedies limiting the collection of user data

We further consider the application and scope of data sharing remedies that aim at providing access to broad user data. We suggest that, in order to preserve innovation incentives, **only raw user data (observed and volunteered) may have to be shared**. Moreover, only data that was created as a **by-product of consumers' usage** of a dominant service should be within the scope of mandated data sharing (e.g., search queries or location data); but **not (volunteered) user data that represent the essence of the service itself** (e.g., posts on a social media site). The line may be sometimes difficult to draw in practice, but it is important to make this distinction because otherwise legitimate business models may be destroyed and innovation incentives can be unduly harmed.

Shared data should generally be made available **in real-time** and continuously through **standardised interfaces (APIs)**.

The most challenging part will be to **balance privacy concerns with maintaining enough level of detail in the data** such that it is valuable for data-driven innovations by third-parties. We survey a number of **technical and institutional means** that can facilitate this balancing act and prevent the de-anonymisation of shared data sets. Within limitations, we entertain the idea that a ***data trust and data sandboxing*** **(at a data trust)** may be feasible if confined to subsets of the data that is to be shared, particularly with a focus on recency, and if confined to a few select algorithms that may be trained at any given time. The EuroHPC, a European collective effort to create a supercomputing ecosystem, may be the technical host to such a data trust. Furthermore, we see some merit in the proposal to **declare deliberate de-anonymisation efforts illegal** under European law.

Data access remedies in online search, e-commerce and social media platforms

We make specific proposals to advance the debate on broad user data sharing in the context of our three case studies. **With respect to *search***, we suggest three categories of data from which data access requests should be considered: ***Data on the search query, data on the search results page,*** **and** ***data on the user***. Generally complex

trade-offs are to be considered and we suggest that mandated access to data needs to be done **on a *case-by-case basis* and requires a *vetting procedure*** of the data access seeker by the regulatory authority. This will likely come alongside additional responsibilities and safeguards for the data recipient. At the same time, a **less detailed, highly anonymised data set should be made *publicly available* without prior vetting**.

With respect to *e-commerce*, we are sceptical that any mandated sharing of broad user data would be warranted, albeit the ***transparency of data*** **use as well as the *detail and mobility of information* that is already provided by platforms** could be improved. Competition in and for e-commerce markets is already intense, and not only focused on data use but also on price. Also, in view of the increased e-commerce related activities of data-rich incumbents from other markets, regulatory forbearance with respect to mandated data sharing seems to be in order for the time being.

In the context of *advertisement-supported social media platforms*, there may be specific cases of vertical integration or competition concerns relating to ancillary markets, where line of business restrictions might be called upon as a last resort. However, we suggest relying on data sharing remedies aimed at ensuring **continual access to the data necessary to compete effectively** in the first instance. Here, the most contentious issues relate to the access to certain categories of aggregate **campaign data** and **user interaction with advertisements**. The sharing of any identifiable personal data, even observed data from use of the platform or exposure to advertising, is justifiably limited by data protection rules. However, if consumers were allowed to opt into the sharing of their usage data with individual content creators, including a unique identifier, when they consume content on the platform, privacy concerns could be alleviated. A case can also be made for levelling the playing field through the **sharing of aggregate performance data** at the level of independent audited audience measurement accessible by all industry participants.

Data remedies facilitating access to deep user data through continuous data portability

Finally, we discuss how **access to 'deep' *raw user data* can be facilitated by strengthening consumer rights above and beyond their existing data portability right under Article 20 GDPR**. In particular, we suggest that in several cases competition and innovation would benefit if firms were obliged to provide consumers with the possibility to **consent *to continuous, real-time data portability***. The scope of data to be transferred should be identical as under Article 20 GDPR. However, to date, more legal certainty is needed with respect to the precise scope of Article 20 GDPR when it comes to observed (user behaviour) data. Generally, like in the case of mandated sharing of broad user data, **only raw user data (volunteered and observed) should be subject to data portability**. In addition, consumers must need to **consent** to every such continuous transfer. Continuous data portability should be made possible through **standardised APIs**, enabling both business-to-business data transfers, but also the use of Personal Information Management Systems (PIMS). Demonstration projects like the Data Transfer Project and Solid exemplify that such continuous data portability is feasible from a technical perspective. However, mandating continuous data portability will also require policy makers to agree on and to facilitate the setting of (open and secure) **standards for data transfers and for consumer consent**.

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DATA SHARING FOR DIGITAL MARKETS CONTESTABILITY: TOWARDS A GOVERNANCE FRAMEWORK

DATA SHARING FOR DIGITAL MARKETS CONTESTABILITY: TOWARDS A GOVERNANCE FRAMEWORK

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While European policymakers are keen to promote data sharing in the European economy, little focus has been given to how this can be delivered practically and at scale. This CERRE report offers a series of recommendations on what authorities will need to do to deliver this ambition, with a particular focus on situations where a party has significant incentives not to share data.

Having assessed where incentives for data sharing already exist (or not) and the current EU legal framework governing such sharing, the authors make a number of recommendations. They find that a potentially very large number of data recipients (as well as the data donors) will require regulation and that an effective, on-going oversight regime will be needed. In adopting regulation, policymakers should also anticipate future needs and widely promote the application of common technical standards for data sharing well beyond the existing scope of large digital platforms.

In addition, regulators will need to take differing approaches to the sharing of data about individual users and the bulk sharing of user data. The firms to which these sharing obligations would apply, the types of data being shared, the means of achieving consent and the question of payment for shared data will vary depending on these differing approaches.

Context

There is today growing momentum behind proposals for 'data sharing' as a remedy for competition concerns in digital markets, as well as efforts by the European Commission (including in the forthcoming Data Act of 2021) to promote the sharing of data more widely in the European economy. However, there is as yet less focus on the practical challenges that will need to be overcome to implement data sharing arrangements that effectively promote innovation and competition in or preserve the contestability of digital markets. There is also limited experience of regulated data sharing in practice. This report aims to address that gap and offers a series of recommendations on what authorities will need to do if data sharing by digital platforms is to occur at scale in Europe. The report complements another CERRE Report on the role of data for digital market contestability[1].

Incentives to share data

Data is already being shared voluntarily under a wide variety of conditions and for a variety of reasons. One category of data sharing arrangements is those initiated by individuals, which normally involve personal data, and in which the benefits of sharing generally accrue to that individual. Examples include digital platforms that allow individuals to download their data to better understand what has been collected about them; laws such as the General Data Protection Regulation (GDPR) which allow individuals to initiate a transfer of data from one organisation to another to switch service provider or 'multi-home' across several providers; other regulations such as the Second Payment Services Directive (PSD2) or the Open Banking regime in the UK which allow individuals to initiate the continuous sharing of data with providers of complementary services; and 'Personal Data Stores' who manage data on behalf of individuals and provide greater security, convenience or opportunities to monetise data.

Although there are many such opportunities for an individual to share data today, **very few appear in fact to do so**. Some major governmental initiatives to promote data sharing, such as Midata in the UK or the smart energy meter data programmes in Europe, have failed

1. *Krämer, Schnurr and Broughton Micova (2020).*

to meet expectations. This seems to be because users have a low level of trust in the arrangements, find the process complex and time consuming, or find it difficult to evaluate the benefits they might obtain from doing so.

Data can also be shared between organisations voluntarily, normally in bulk and without first requiring the consent of individual users. In this case, the benefits of data sharing are likely to be enjoyed by a large number of users rather than being confined to a specific individual. Organisations such as insurance companies may share data when there is a mutual advantage to doing so (to identify fraudulent activity), digital platforms, such as Facebook, may allow others to access data they hold to encourage complementary innovation or may provide 'ancillary' services such as identity management in return for access to the data of those other firms that use them. Firms like Bloomberg or Nielsen may collect and sell data, or, like MasterCard, may donate data to support research or other causes. Firms may not share the data itself, but may allow others to interrogate it through 'sandboxes' or 'trusted intermediaries'. Many public organisations share significant volumes of data generally without charge and the Open Data Directive imposes significant data sharing obligation of public sector data.

Although more data is shared between organisations, **they encounter similar issues to individuals**. It can be complex and difficult to agree on the technical standards required for data to flow smoothly between them. Firms may be uncertain about the legal status of the data over which they exercise control and whether sharing may expose them to unforeseen liabilities. They may also be uncertain about the credentials of the intended recipients or their capacity to keep data secure, or about the kinds of reputational risks which became apparent, for example, after Cambridge Analytica obtained access to data on Facebook users. For these and other reasons, many organisations may conclude that the costs and risks of data sharing outweigh the potential benefits.

Some form of regulation may be required to overcome some of the barriers to sharing data, even when both parties otherwise have incentives to share data and would benefit from doing so. This report is, however, concerned with circumstances in which one of the parties has powerful incentives not to share data because it is a significant source of a competitive advantage

which is difficult or impossible for others to replicate, and which therefore allows that platform to preserve its 'gatekeeper' position in its core market and at the same time to leverage these advantages into other markets. The objective of imposing an obligation to share data in these circumstances is therefore to preserve the contestability of adjacent markets as well as, more speculatively, to support rivalry in the core market and ultimately, to promote data driven innovation in the EU.

EU legal framework for data sharing

Competition laws may impose data sharing obligation under some strict conditions. If data could be considered as essential facilities, the refusal to share such data may be considered as an abuse of dominant position prohibited by Article 102 TFEU. However, the conditions of the essential facilities, even when they are adapted to take into account the specific characteristics of data, are difficult to meet and, to date, very few refusals to share data have been considered as abusive. Moreover, when two data-rich firms merge, the competition authority may impose some remedies if the combination of previously separate data sets would significantly impede effective competition. In such circumstances, the authority may either impose the merging parties to share data with their competitors (as has been the case in *Thomson/Reuters*) or impede the combination of data sets by the merging parties (as may be the case in the yet to be decided *Google/Fitbit* case).

Alongside competition law, the **EU horizontal or sector laws also contain several rules that stimulate or impose data sharing and data portability**. Concerning horizontal rules applicable to all sectors of the economy, the obligations focus mainly on the portability of personal data (with the 2016 General Data Protection Regulation and the 2019 Digital Content Directive). The portability of non-personal data is encouraged, but not imposed, by the 2018 Free Flow of Data Regulation. Although steps in the right direction, these rules have several limits and shortcomings and they do not provide for a fully-fledged data sharing framework. The most comprehensive data sharing obligation and governance framework is imposed by the 2019 Open Data Directive which applies to data owned by public sector bodies and public undertakings in the EU. There are also extensive data sharing obligations in several sectoral legislation, for instance in the

financial sector (2015 Second Payment Services Directive), the automotive sector (2018 Motor Vehicle Regulation), and the energy sector (2019 New Electricity Directive).

Thus, while the EU legal framework contains some rules imposing data sharing, rules are in general limited and do not provide for a comprehensive and effective governance framework to share data.

Recommendations for an effective governance framework in case data sharing is imposed

This report does not recommend that a particular institution, whether at the national or European level, is given the task of regulating data sharing. Whatever the precise institutional arrangements, we identify several challenges which a regulator will need to overcome. These include determining the identity of the digital platforms that will be obliged to share data; deciding the conditions under which data is shared and the obligations of recipients; the user experience (if user consents are required); the scope and other characteristics of the data to be shared; arrangements for the governance of data sharing and the resolution of disputes and errors; and the commercial or other terms under which data is shared. The report presents several conclusions and makes several recommendations.

Regulating recipients as well as donors

The report concludes that **regulation for data sharing should not be viewed as being limited to the oversight of a small number of large platforms that might be obliged to share data**. That is because it will also require strict oversight of potentially a very large number of smaller firms that might seek access to such data and which may then rely upon it to provide services of various kinds. Given the potentially wide range of uses to which data could be applied, and the wide range of organisations which may require access to such data, individual users will not consent to the sharing of data unless they can be confident that any recipient of the data will keep it secure and will adhere to other conditions of sharing, so as to preserve trust in, and the integrity of the overall data sharing process. The controllers of commercial data will also be rightly concerned about

bulk sharing obligations if misuse by others puts their reputation or commercial position at risk. Recipients of data may be also putting themselves in a position of acute dependency (since they may rely upon uninterrupted data sharing to sustain their services for users) and will not enter into such arrangements unless they consider that they have adequate protections and rights of redress in the event of any disruption or interruption in supply. A comprehensive system of regulation of both donors and recipients of data will be required to guard against misuse and to ensure trust on all sides.

It follows that if regulated data sharing is to be adopted at a significant scale, regulators will need to establish an effective regime for overseeing those in receipt of data and for enforcing the rules effectively on an ongoing basis. This will need to include rules governing the resolution of disputes and determining how liabilities fall if consumers or other firms are harmed. Since many of those who share or receive data are unlikely to hold market power or otherwise to be guilty of any abuse, we consider that oversight of such arrangements is unlikely to be an appropriate task for a competition authority and will instead require a dedicated regulatory body.

Extensive obligations to adopt common technical standards

All forms of data sharing will require the **adoption of common technical standards by both those sharing data and those in receipt of it**. The same standards should be adopted for all the different forms of data sharing that we propose. We consider that potential recipients of data have sufficient incentives to adopt the standards since they would not otherwise obtain access to the data they require. Those platforms that have been directed to share data will need to be obliged to adopt the relevant standards, such that data can be shared in a form and manner which supports the regulatory objectives. In the early stages of regulation, this may impose additional costs on the newly regulated entities as they have to restructure the way they manage their existing data assets or adopt new external interfaces. This may also contribute to delay in the implementation of new data sharing obligations, which will be a particular concern if the objective of data sharing is to prevent leveraging into emerging digital markets. In the longer term, we conclude that data sharing regulation should promote the very extensive adoption of common technical standards by organisations which may not currently have obligations

to share data (but which might be required to in the future), those who may not currently request access to data (but will want to preserve the option to do so in the future), and in relation to forms of data which may not currently be shared (but which may be required to be shared in future). **This 'anticipatory' approach to technical standards means that regulators should consider the application of common technical standards to data sharing in sectors well beyond the existing scope of large digital platforms**, as has been proposed in Australia. In short, **we recommend regulators should decouple requirements to adopt common technical standards from obligations to share data in the expectation that the former will be much more extensive than the latter**.

The most important and difficult role for regulators will lie in determining the type and scope of data that is to be shared and which organisations should be obliged to share it. **We conclude that two forms of regulated sharing are likely to dominate**.

Recommendations on sharing of data about individual users

The first form of sharing – and **the one which is likely to be capable of being implemented first** - will be **the sharing or porting of data about individual users**. This mode of sharing is likely to be appropriate when the individual concerned will benefit directly from the sharing process, usually through the provision by the recipients of complimentary services in adjacent markets. The value of the data, in this case, lies in its depth and personalised nature, rather than in its volume. The process to enable the sharing of the data will generally require that the user consent to the transfer, and the process by which these user consents are obtained and authenticated will have a significant impact on the effectiveness of this remedy. Technologies such as biometric IDs will have a significant role to play.

The data to be transferred would be data provided by the user to the platform and data derived from observations of that individual's interactions with the platform. It would exclude 'inferred data' that is created by the platform itself (as well as excluding third party data that is purchased from other sources). The presumption should be that all relevant data about an individual would be shared.

The overall competitive impact of these data sharing arrangements will necessarily be limited, given the relatively high transaction costs

associated with first obtaining individual consents from every user and the relatively small volumes of data that will be transferred each time consent is obtained. Over time, however, data that is obtained in this way could accumulate and be used for other purposes. For this reason, **we recommend that obligations to share data about individual users in the way we propose should be quite extensive and apply to digital platforms which we would describe as meeting the 'gatekeeper minus' threshold**. This would mean a strong presumption that the obligation to share would apply to all platforms which the regulator had determined as having 'gatekeeper' or equivalent status and to some others as well. However, **this obligation would not apply to every platform or firm**, and so would be less extensive than, for example, **the 'data portability' obligations which apply under the GDPR (which are narrower in scope)**. We do not recommend that the European Commission seek to expand the existing GDPR data portability requirements to address the competition concerns we consider in this report and conclude that a separate regime, specifically designed for this purpose, is the better approach.

We consider that there is a case for a regulator to require the sharing of individual user data without any form of payment passing between the donor and the recipient. Each party would be expected to bear its costs to the transfer.

It is unclear at this stage how effective the arrangements for the sharing of individual data outlined above would prove to be. However, there is a risk that the high transaction costs and uncertain benefits continue to deter users and render this approach relatively ineffective in preserving the contestability of the markets we are concerned with. **In such circumstances, we recommend the European institutions should consider more radical approaches, including changes to the GDPR which would allow for individual users to 'opt out' their data** (rather than requiring them to 'opt in') when transfers of their data are initiated - provided always that the recipients of the data comply with the relevant regulatory conditions.

We recognise that this may represent some loss of consumer sovereignty over their data, but consider that such a trade-off may need to be made if data sharing arrangements are to achieve their aim of ensuring contestability in digital markets. It is far from clear that the interests of European consumers are better served by preserving

rights to consent whilst allowing new digital markets to be dominated by existing 'gatekeeper' platforms. Indeed, in the long run, the privacy rights of European consumers may be better served by measures that more effectively promote competition. At the very least, the debate should be had and **we, therefore, recommend the European Commission consider provisions in the forthcoming Data Act to enable the use of 'opt out' arrangements for the sharing of personal data to preserve market contestability under certain prescribed conditions**. There is certainly a precedent for such arrangements, since control of personal data sets has often changed without individual user 'opt ins' when one firm acquires another firm or when one firm acquires another's data assets.

Recommendations on the bulk sharing of user data

The second form of sharing will be the bulk transfer of aggregate user data. As with the first category, this would involve sharing data provided by individual users or arising from their interactions with the platform but would exclude inferences that are generated by the platform itself. This mode of sharing is likely to support entry into adjacent or emerging markets, with such entry being supported by insights derived from large data sets. It may even support competition in some or all of the core market activities from which, or by means of which, the data has been derived.

The overall competitive impact of these data sharing arrangements could be significant – likely more significant than for individual user data - since the volume of data to be shared is likely to be very substantial and may represent a significant proportion of the donor platform's data assets. In some circumstances, it may be necessary for the data to be shared without first anonymising it to allow recipients to effectively rival the incumbent platform. **Since obtaining individual consents from every user would not be feasible in these circumstances, we recommend that regulators and policymakers consider other mechanisms to enable the bulk sharing of non-anonymised user data**.

Alternatively, regulators should consider requiring the platform that controls the data to allow third party access to the full data set for training algorithms or otherwise deriving the same sorts of insights from the data that are available to the incumbent. The terms under which such access is provided would

also need to be carefully regulated since those seeking access to the data sets would remain dependent upon the owner of the assets providing full and unrestricted access. Similar challenges arise even the data is held by a 'neutral' intermediary. Such arrangements are therefore likely to require a high degree of regulatory oversight (and associated cost), although they also have considerable attractions if non-anonymised data is important to preserve contestability or if very large data sets are involved.

Although we would expect all the relevant data about an individual user to be shared with every recipient, **there is likely to be much greater heterogeneity of demand amongst potential recipients of bulk transfers of aggregate data**. Some potential recipients may require (or may only be able to handle) relatively small volumes of data, representing only a fraction of that held by the donor. Others may require the sharing of much larger data sets. There may also be questions about the geographic scope of the data to be shared. This will present two challenges. First, the regulator will need to ensure that a suitable menu of data options is developed, preferably collaboratively and inclusively, to ensure that the needs of as wide a range of potential recipients as possible will be met as far as possible. This is likely to involve a degree of compromise on the part of some parties, with the regulator adjudicating between conflicting demands.

Second, **we consider there is a strong prima facie case for assuming that recipients of aggregated data should be required to pay for the data, with the payment varying by the volume and value of the data being shared (and not simply the costs of implementing the data sharing arrangements or storing the data)**. The primary concern here is to preserve incentives for both parties in the sharing arrangement to innovate and invest in existing or new digital services to acquire additional data for themselves. We do not want data sharing arrangements to crowd out other forms of commercial activity from which users derive significant benefits, particularly in many digital markets.

However, we do not make firm recommendations as to how these prices should be derived because we have yet to find a well-developed methodology for doing so. Requiring firms to agree with terms on a 'FRAND' basis may not be adequate in several circumstances. **We recommend that a study be undertaken by the Commission to consider how regulators would establish wholesale prices for**

data that was to be shared. The methodologies and the practices which were developed for the public open data framework to calculate the marginal costs and to recover costs developed for public data may feed this study. We also consider that setting appropriate wholesale prices for the receipt of aggregate data will also be necessary to ensure that recipients have appropriate incentives to reassess their data requirements as they grow and develop their businesses, allowing for the possibility that they would terminate existing data sharing arrangements once they have acquired, or are in a position to acquire, sufficient data for themselves from their users. Otherwise, extensive data sharing arrangements could likely become a permanent feature of European digital markets in the years to come.

The final question in this context concerns the identity of the platforms that would be obliged to share aggregated personal data on a bulk basis. **We conclude that this should be a much-limited set of entities than we recommend for the porting of individual data** and would not necessarily be a requirement of every platform that was found to hold 'gatekeeper' status under the European Commission's latest proposals, although we think a designation of 'gatekeeper' status should establish a rebuttable presumption. **We, therefore, characterise this sub-set of entities as being those that meet a (more demanding) 'gatekeeper plus' threshold**. The analysis required to demonstrate this would need to be undertaken on a case by case basis.

The challenge ahead

The recommendations in this report, if adopted, would represent an extensive programme of regulatory activity that would need to be undertaken by bodies with responsibilities for implementing data sharing which have yet to be assigned in Europe. **Establishing the institutional and regulatory framework to deliver data sharing at scale will require legislation**. Moreover, we recommend that the European policymakers consider further legislative changes in the forthcoming Data Act to enable the sharing of personal data on an opt out basis under certain narrowly prescribed circumstances and to ensure contestability in digital markets.

Finally, we are mindful that data sharing remedies that we have considered in this report arise from the assumption that digital platforms will continue to derive significant market power from their centralised

control of big data sets which they have accumulated by enabling diffuse groups of users to transact with each other through the platform. This may be the case, but regulators and policymakers should also keep an eye on (and potentially take steps to promote) **new technologies and architectures which might in the future enable a much greater degree of decentralisation and wider distribution of data**, thereby removing the very sources of market power which this report has sought to address.

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