



Digital platforms regulation: An innovation-centric view of the EU's Digital Markets Act

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Key Points

- We consider the merits of the recent EU's Digital Markets Act from the perspective of innovation and value creation.
- We conceptualize **innovation** as new interactions being created by the digital platform leading to 'value creation', in contrast to facilitating existing interactions or market transactions, which we conceptualize as **coordination** between business users and end-users leading to 'value exchange'.
- We apply this **innovation perspective** to the DMA to assess two of the most contentious provisions: self-preferencing and data-sharing.
- We show how these practices reveal great heterogeneity regarding the extent to which they facilitate innovation (and thus value creation) or only affect redistribution of value depending on whether they **replace** existing interactions (little to negative innovation effect), **sustain** existing interactions (moderate, positive innovation effect), or they **trigger** new interactions (large, positive innovation spillovers)
- We thus outline a framework for a more fine-grained analysis of those practices, according to which the business model agnostic approach to digital platforms taken in the DMA results constraining if not distortive: it risks treating practices that are value-enhancing equally to those put in place to capture greater value.

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I. Introduction

The EU's Digital Markets Act (DMA) is set to become the new standard regulatory framework of the digital economy. It introduces some innovative aspects in ex-ante regulation to promote market contestability in a promising direction, like the general objective of counteracting practices that ossify competition and limit contestability of core services in the digital domain. However, the current approach with a scattered list of binding provisions and obligations not properly tailored to the varying types of digital platforms and business models may not deliver on the law's premises and objectives of a more contestable and fair competitive landscape.

Specifically, we are concerned that the business model agnostic approach to digital platforms taken in the DMA would miss out on the critical role those digital platforms play for the creation of value. Digital platforms do not just facilitate existing transactions between business users and end-users, they also enable *new* interactions that would not occur in the absence of the platform. These interactions are linked to the production of novel kinds of data which further contribute to the innovativeness of platform ecosystems.¹ Our core thesis rests on the differentiation between creating new interactions through the digital platform that we conceptualize as *innovation* leading to 'value creation', in contrast to facilitating existing interactions or market transactions, which we conceptualize as *coordination* between business users and end-users leading to 'value exchange'.

The DMA seems to emphasize the potential market failures arising from distortions instantiated by the 'gatekeeper' with the goal of capturing value (unfair practices protracted

¹ Alaimo, C. and Kallinikos, J. 'Computing the everyday: Social media as data platforms' (2017) *The Information Society* 33(4): 175-191; Alaimo, C., Kallinikos, J., and Valderrama, E. 'Platforms as service ecosystems: Lessons from social media' (2020) *Journal of Information Technology* 35(1): 25-48.

under limited market contestability). However, it fails to consider *innovation failures*, or *ecosystems* not functioning properly² in their capacity as meta-organizational forms³ to stimulate innovations that need to come together to create specific value propositions for consumers.⁴

Ignoring these aspects may lead to unintended negative consequences in terms of lost innovation and reduced value creation capacity, resulting from a decontextualized approach taken in the DMA. A modern regulatory framework on the digital economy will only prove robust over time if it properly accounts not just for how value is distributed among economic actors in a given context, but also, and importantly so, for how value gets created, along with the context wherein it takes place. The innovation literature on digital platforms emphasizes the creation aspect, recognizing that value does not result simply as a byproduct of competition among atomistic firms; it needs to be created. Accordingly, remedies to re-establish market efficiencies and contestability inspired largely by other network markets will generate little insights but may undermine value creation and, in fact, ossify rather than stimulate competition.

As scholars of competition and innovation in digital markets, we worry that the DMA, as currently structured, might be overly focused on the assumption that the targeted practices have negative effects on the competitive landscape, possibly neglecting important secondary effects,

² See e.g., Jacobides M., Cennamo C., and Gawer A. ‘Towards a theory of Ecosystems’ (2018) *Strategic Management Journal* 39: 2255–2276. <https://doi.org/10.1002/smj.2904>. In a recent paper, Jacobides M., Cennamo C., and Gawer A., ‘Complementarities and externalities in platforms and ecosystems: From value creation to inherent failures’ (2020) Working paper: London Business School, lay out a framework to understand the kind of market failures that digital platforms help solve as new organizational models, and the inherent, post hoc ‘ecosystem failures’ that may emerge as a result of these new structures. They distinguish between *functional failures*—problems with the inherent ability of platforms and ecosystems to deliver value to the final customer; and *distributional failures*—issues relating to an orchestrator’s abuse of power and its ability to extract excessive value from its partners and complementors.

³ Kretschmer T., Leiponen A., Schilling M., Vasudeva G. ‘Platform ecosystems as meta-organizations: Implications for platform strategies’ (2022) *Strategic Management Journal* 43: 405-424.

⁴ see e.g., Cennamo C., and Santaló J. ‘Generativity tension and value creation in platform ecosystems’ (2019) *Organization Science* 30(3): 617-641. <https://doi.org/10.1287/orsc.2018.1270>.

including important value creation-distribution tradeoffs, and implications for innovation, particularly for small and medium-sized firms. Below, we articulate these issues to elucidate on the tradeoffs for innovation and value creation. We offer a simple innovation framework to assess the anticompetitive and possibly unfair nature of given practices, which helps us distinguish when these practices are value enhancing⁵ and when instead they are problematic.

II. DMA: The problem of business model agnosticism in designating platform providers as gatekeepers

The DMA starts from the assumption that value and innovation is created outside the digital platform. It explicitly considers that:⁶

- Digital platforms are gatekeepers controlling main ‘gateways’ to markets.
- Platform gatekeepers act as intermediaries of ‘core digital services.’
- Designation of gatekeepers must be business model agnostic.

This implies that the digital platform and its specific business model is *neutral* to value creation, except for the intermediary role of enabling ‘value exchange’ through transactions. Hence, the DMA neglects any benefits to users from the integration of multiple services and crucially, it abstracts from all innovation done by gatekeepers to improve the service they offer to all ecosystem participants.

Management research shows that value creation and innovation are not disjointed from how digital platforms operate. Their design and orchestration greatly affect which kind of value

⁵ Note that the framework we offer here looks at value enhancing solely from a pure innovation standpoint. While a more holistic approach to welfare analysis would consider the value added per transaction times the number of transactions, we restrict our focus here on the value being created by unlocking new transaction opportunities or sustaining and thus expanding existing transactions. So, we focus on the structural elements affecting the nature of the transactions rather than on the value of the single transaction.

⁶ See e.g., article 3, ‘designation of gatekeepers’ recital.

is being created and how, by unlocking innovation in latent interactions that otherwise would not be possible. A market transaction perspective would focus narrowly on value exchange and the role of platform providers as gatekeepers controlling the infrastructure that enables parties to transact. An innovation perspective would focus instead also on how value is created in the first place, before it can get transacted, and thus on the role of platform providers as ‘*gate-makers*’. In their role as *gatemakers*, digital platforms design the digital infrastructure, tools and business models that can unlock new latent interactions, thus open gates to market for existing as well as new service/content/product providers. Importantly, as the interactions designed by platforms are all linked to the production of data, focusing solely on platforms as facilitators would lose sight of their role as data producers and how this, in turn, triggers novel data-based services at the ecosystem level.⁷ Granted, this organizational design role also affects how value is split within and across platforms. However, issues of value distribution cannot be tackled in isolation. Such an approach risks overlooking the extent to which the imposed provisions might affect all the dimensions of value including how value is created.

We take an innovation perspective on the DMA, providing an alternative framework for interpreting and assessing some of the most contentious and relevant design and governance practices put in place by platform providers. This innovation framework provides a tool to assess whether a particular practice can enhance value by unlocking innovation (i.e., as we outline later, this relates to latent and novel interactions that would otherwise not happen in the economy), and how it affects the incentives for innovation of the platform provider and business users. In

⁷ Alaimo, C., Kallinikos, J., and Valderrama, E. ‘Platforms as service ecosystems: Lessons from social media’ (2020) *Journal of Information Technology* 35(1): 25-48.

particular, we will focus here on self-preferencing and data sharing. Before turning to these specific cases, next we briefly describe a simple innovation framework.

III. What do platforms do? An innovation, value-creation perspective

Platforms are often described as intermediaries that connect different sides of a (potential) market that would not connect as easily otherwise.⁸ This perspective allows for a simple, but powerful assessment of a platform in terms of its innovation performance, i.e., its contribution to the overall value created through interactions. Interactions facilitated by a platform (P) take place between a *business user* (BU_i) who produces services (or content, or products) and an *end user* (EU_j) who consumes those. Each interaction creates a certain benefit $B(ij)$ at a cost $C(ij)$. For simplicity, we consider the benefit to be constant B and we only vary the cost.⁹

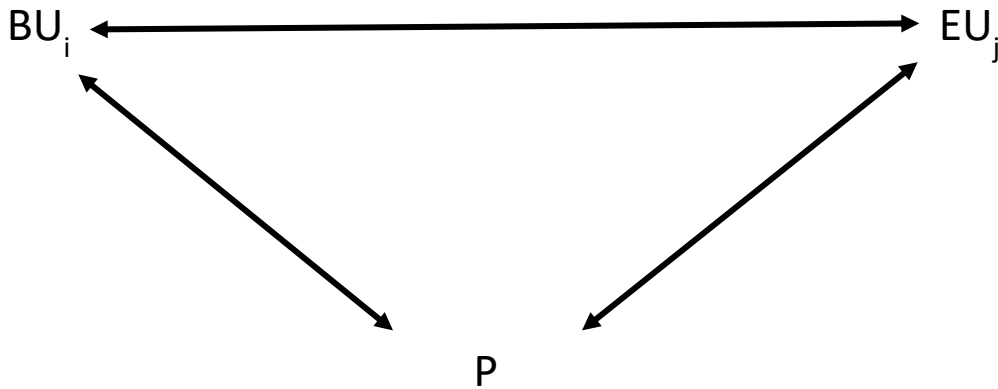


Figure 1: Single interaction facilitated by a platform.

If an interaction is facilitated via a platform, we assume it leads to a reduction in the overall cost of the interaction (otherwise there would be no justification for the platform to exist). That is,

⁸ Parker, G., Van Alstyne, M., & Jiang, X. 'Platform ecosystems: How developers invert the firm' (2017) *MIS Quarterly* 41(1): 255-266.

⁹ Naturally, if we assume that platform-mediated interactions generate more benefits at the same cost, the logic applies equally.

$C(ij) > C_P(ij)$, where C_P indicates the cost of the interaction via the platform. Figure 1 illustrates this situation for a specific interaction. The extent to which a platform makes an innovative contribution depends on which type of interactions it facilitates. We discuss three scenarios:

Existing interactions. At its simplest, a platform can increase the efficiency of existing interactions and create value that way. For example, consider the classic example of an online newspaper which allows end users to read content created by business users such as journalists or content producers. Another example is a payment system like VISA or PayPal that reduces the shared cost of transaction for business and end users (i.e., sellers and buyers). The function (and the benefit) of the platform here is to replace existing interactions through a more efficient system. The result is a shift of bilateral interactions to (multilateral) interactions conducted on the platform. Examples are the basic interactions provided by platforms such as eBay.

Latent interactions. Some interactions are prohibitively costly in the absence of a platform in the sense that the (expected) benefit does not outweigh the cost of interacting. For instance, consider a flight booking website such as Skyscanner that aggregates the offerings of multiple airlines and makes them accessible to all potential consumers. The platform thus lets consumers choose between different options that they would have had to search separately otherwise on the websites of the respective airlines (a searching activity that is somewhat costly). Similarly, a music website (like Bandcamp) aggregates independent artists in a single (virtual) location. Since independent artists often lack wide exposure to potential consumers, searching for them is costly and the likelihood that such an independent artist does not reach their entire latent consumer base is significant. Bandcamp then provides a single place for niche and specialized content, which it aggregates. In doing so, it ‘creates’ demand in the sense that latent

interactions that would have not happened otherwise are made possible. In our terminology, this constitutes an innovation because the overall value created by all interactions increases.

Novel interactions. Finally, some classes of interactions may not have existed at all prior to the introduction of a platform. While these are similar in their logic to latent interactions, they differ qualitatively. For example, end users can engage in several interactions that did not exist offline. Platforms enabling consumers to rate and comment on their restaurant experiences like TripAdvisor or Yelp create an entirely new class of interactions, user-generated evaluations, that did not exist before. Other examples are interactions such as ‘searching’ or ‘friending’ other users on social media platforms. This scenario where a new class of interactions occur exclusively on platforms constitutes an ‘innovative field’ of interactions and consequently creates value that would not have been created in the absence of a platform.

This classification provides a framework to assess a platform’s activities (and possible regulatory interventions) regarding their expected impact on innovation. Put simply, replacing existing interactions has little to no innovative value (even though there may be other efficiency gains as a result), while facilitating latent interactions expands the market through increasing the number of interactions that take place and therefore increasing the value being created. Finally, facilitating entirely novel interactions, i.e., introducing aspects to the economy that were not present before, clearly constitutes an innovative output of greater value creating capacity.

Most platforms will contain elements or aspects of all three types of interactions. Still, the relative weight of each type can be assessed as it will depend on the platform’s architecture and

business model design.¹⁰ For example, platforms such as YouTube or Facebook (but also Wikipedia), are likely to chiefly facilitate novel or latent interactions – user-generated content had frequently been confined to small niches and social circles and now receives wider exposure, i.e., reaching a much larger audience. Conversely, pure e-commerce websites predominantly replace interactions previously conducted through bilateral interaction, i.e., existing interactions, and aggregators increase interaction efficiency thus favoring latent interactions. This implies that an innovation-centric view will classify different platform types according to their innovative contribution based on the relative share of existing, latent, and novel interactions they facilitate. It is here that we consider the DMA proposal to make gatekeeper designations ‘business model agnostic’ (possibly) incomplete. Specifically, if regulation is designed to promote both static and dynamic efficiency and if dynamic efficiency is driven by the extent of innovation generated by a specific platform, applying the same set of regulatory rules (and definitory thresholds for, say, the gatekeeper role) for platforms with varying business models seems problematic.

IV. Self-preferencing: An innovation perspective

The DMA connotes as harmful self-preferencing practices the promotion and preferential treatment of platform providers’ own business services. This is in relation to platform providers’ ‘*dual role*’ ‘as a provider of core platform services to end users and business users while also competing with those same business users in the provision of the same or similar services or products to the same end users)¹¹. However, while some of these practices may look prima facie anti-competitive, they can also be potentially value-adding or needed to unlock innovation

¹⁰ See Cennamo C. ‘Competing in digital markets: A platform-based perspective’ (2021) *Academy of Management Perspectives* 35(2): 265-291; and Constantinides P. ‘[Regulating Digital Platforms: Business Models, Technology Architectures, and Governance Rules](#)’ (2022) *TechReg antitrust chronicles*.

¹¹ As defined in the DMA, p.24 §43

dynamics. Seen from an innovation perspective, self-preferencing practices from platform providers can have negative or positive effects depending on whether they replace, sustain, or trigger new interactions.

- **Replacement effect** – they substitute existing interactions between business users and end-users with alternative bilateral interactions between the platform provider and end-users. This can happen, for instance, when an e-commerce marketplace (such as Amazon Marketplace) supplies products that are direct substitutes of products supplied by business users.¹² In this case, giving first party complements (the products and services supplied directly by the platform provider) prominence in search/rankings affect only the value distribution among existing interactions, substituting for some of these interactions. It does not increase innovation capacity, neither of the platform provider nor of the whole ecosystem. These cases negatively affect innovation because they reduce the incentives of the gatekeeper to unlock new interaction domains.¹³
- **Sustaining effect** – self-preferencing practices add to existing interactions, augmenting their benefits for end-users and/or reducing costs for business users to engage in the relationship. This can happen, for instance, when a platform provider’s ‘ancillary services’ (such as payment, shipping, writing and language services, communication services and other digital tools) are bundled with the core service to facilitate the

¹² Zhu F, Liu Q. ‘Competing with complementors: An empirical look at Amazon.com’ (2018) *Strategic Management Journal* 39(10): 2618-2642.

¹³ Nonetheless, albeit negative from a pure innovation standpoint as per the model we laid out here, such self-preferencing may bring benefits in terms of efficiency gains proceeding from enhanced competition for services among business users (to the extent that business users can compete on equal foot with the platform provider). See e.g., Hagiu A., Teh T-H., Wright J. ‘Should Platforms Be Allowed to Sell on Their Own Marketplaces?’ (2020) *RAND Journal of Economics* forthcoming, Available at SSRN: <https://ssrn.com/abstract=3606055> or <http://dx.doi.org/10.2139/ssrn.3606055>.

interaction.¹⁴ For instance, Amazon Prime service adds to existing interactions by reducing the cost for ‘Prime’ business users to process their order through the Amazon Fulfillment Service (i.e., stocking and shipping services). It also increases the benefits from the existing interactions for the end-user who can experience lower transaction costs from engaging in the relationship with an Amazon Prime business user than with business users that are not part of the Amazon Prime program. Thus, promoting these offerings from Amazon Prime business users in search/rankings can produce positive innovation effects by augmenting the value of existing interactions via these ancillary services. The platform makes new combinations cheaper to produce (lowers production costs and tech entry barriers), and/or more valuable because they are now consumed as part of a greater ecosystem (increase the returns from innovation investment).

- **Trigger effect** – self-preferencing practices create completely new interactions. This is the case when platform providers invest in new market domains providing new products and services, and which open up entirely new market categories. For instance, in the case of platforms such as Videogaming,¹⁵ Apple iOS¹⁶ or social media (Facebook’s integration of Instagram),¹⁷ provision of first-party complements in new tech domains may unlock opportunities for the creation of new interactions through:

¹⁴ See Cennamo C. ‘Competing in digital markets: A platform-based perspective’ (2021) *Academy of Management Perspectives* 35(2): 265-291.

¹⁵ Cennamo C. ‘Building the Value of Next-Generation Platforms: The Paradox of Diminishing Returns’ (2018) *Journal of Management* 44(8): 3038-3069.

¹⁶ Foerderer J., Kude T., Mithas S., Heinzl A. ‘Does Platform Owner’s Entry Crowd Out Innovation? Evidence from Google Photos’ (2018) *Information Systems Research* 29(2): 444-460.

¹⁷ Li Z., Agarwal A. ‘Platform Integration and Demand Spillovers in Complementary Markets: Evidence from Facebook’s Integration of Instagram’ (2017) *Management Science* 63(10): 3438-3458.

- **Innovation spillovers** – the first-party complement showcases ways to leverage the core platform technology to create new applications and combinations, generating learning effects for other developers¹⁸
- **Attention spillovers** – the first-party complement attracts attention by end-users and business users to a whole new market area, thus creating opportunities for demand and supply side to engage and interact.¹⁹

Promoting these first-party complements is a way for the digital platform to signal those innovation opportunities, shape the innovation trajectory in the ecosystem towards those new tech domains, and better coordinate the innovation efforts of business users. Adopting this innovation perspective at the interaction level, we would then consider self-preferencing practices to have a potential negative effect on innovation *when* they lead to a replacement effect; but practices with a sustaining or trigger effect, would rather be beneficial *on average*,²⁰ or even outright necessary to unlock new value creation – i.e., possible future new interactions that have not been created as yet. These practices, as per the examples above, are likely to differ and depend on the specific platform technology and business model design. A one-size-fits-all

¹⁸ Cennamo C. ‘Building the Value of Next-Generation Platforms: The Paradox of Diminishing Returns’ (2018) *Journal of Management* 44(8): 3038-3069; Ozalp H., Cennamo C., Gawer A. ‘Disruption in platform-based ecosystems’ (2018) *Journal of Management Studies* 55:7.

¹⁹ See Li Z., Agarwal A. ‘Platform Integration and Demand Spillovers in Complementary Markets: Evidence from Facebook’s Integration of Instagram’ (2017) *Management Science* 63(10): 3438-3458; Foerderer J., Kude T., Mithas S., Heinzl A. ‘Does Platform Owner’s Entry Crowd Out Innovation? Evidence from Google Photos’ (2018) *Information Systems Research* 29(2): 444-460.

²⁰ Note that we are considering the average impact on the overall market, on-platform vs. off-platform. We are not considering the individual benefits or detriments for each, individual business user. As it is often the case with innovation, some business users will find themselves at disadvantage in the new competitive landscape that emerges as a result of the innovation activity and face potential business losses. Others will thrive in such innovative environment and find opportunities to unlock value, for end users as well as for themselves. We’re thus considering here situations that, on average, are likely to produce positive net gains overall, not a Pareto efficiency case (i.e., situations where exchange, production, and output efficiency cannot be increased further without making at least one (or a subset) of actors worse off).

obligation banning these practices would not necessarily be in the best interest of end- or business users.

V. Data access and processing: An innovation perspective

Providers of core platform services learn from data generated by business users and end users using both core platform services and digital services. Data can be generated by the rendering of existing interactions (i.e., simple business transactions), latent interactions (e.g., facilitated by demand aggregation or platform tools and ancillary services) or by novel interactions (e.g., searching or ratings). Data so generated help improve existing interactions, yet at the same time they create new interactions, offered by platform providers as well as by business users. At least in principle, both the platform providers and the business users can use aggregated and non-aggregated data – that may include anonymized and personal data – to learn about the preferences of their end users and to innovate interactions that can serve those end users. Thus, generating, accessing, and processing data can lead to a virtuous cycle of more value creation and value capture. According to the DMA,²¹ platform providers acting as gatekeepers can marginalize their business users by concentrating technical and market tools with which to access and process data that they withhold from business users and other third parties:

‘To prevent gatekeepers from unfairly benefitting from their dual role, it should be ensured that they refrain from using any aggregated or non-aggregated data, which may include anonymised and personal data that is not publicly available to offer similar services to those of their business users. This obligation should apply to the gatekeeper as a whole, including

²¹ As per considerations on page 24, §43.

but not limited to its business unit that competes with the business users of a core platform service.’

We agree with the DMA’s stance that platform providers should share data that they access and process on their platform with the business users and third parties to enable innovation. At the same time, we argue that how data are generated, accessed, and processed should be taken into consideration to implement obligations. If we associate the types of interactions discussed in the self-preferencing section, we may have the following conditions for innovation:

- If data are generated from *existing* interactions – low innovative potential.
- If data are generated from *latent* interactions – medium innovative potential.
- If data are generated from *novel* interactions – high innovative potential.

First, when platform providers access and process data generated on their platform by existing interactions (i.e., transactions) of business users or third parties, the exclusive access may negatively impact innovation because it may lead the platform to replace existing interactions. For example, if Amazon can access and process data about transactions between end users and third parties on their marketplace, those data create insights that may lead Amazon to replace third party products.²² Platform providers like Amazon may use their increased access to data in multiple vertical markets to improve their algorithms and produce more accurate results to specific end user search queries that kills innovation for business users that only have access to their respective vertical markets.

Second, when platform providers can access and process data generated on their platform by latent interactions, those data may be used to add value to existing interactions, thus benefiting

²² Zhu F, Liu Q. ‘Competing with complementors: An empirical look at Amazon.com’ (2018) *Strategic Management Journal* 39(10): 2618-2642.

innovation for business users and third parties. For example, Amazon can access and process data about Prime membership that create insights into product/service bundles (business transactions + prime services i.e., stocking and shipping services) not previously considered. These complementarities between products and services could add to existing interactions in ways that positively impact innovation for business users and third parties. When demand is aggregated as in the case of price comparison websites or booking services such as Skyscanner, data are generated by interactions that would have been too costly or less effective otherwise, exhibiting a medium innovative potential for users and third parties.

Finally, platform providers may design novel interactions that produce data which in turn generate innovation spillovers for existing and latent interactions. Consider the case of TripAdvisor and the novel interactions it generates on ratings and reviewing, together with the data they produce. These data have high innovative potential for end users and third parties, as they would have not been produced without TripAdvisor's interaction design.²³ Combined with data generated by existing or latent interactions, these data may eventually lead to the creation of novel services from third parties or to the creation of new business altogether. Consider how Google created novel interactions with search. Search interactions generated data which would not exist otherwise and procure innovation spillovers for existing and latent interactions. Search data facilitated the development of new services and new businesses (i.e., SEO). Therefore, novel interactions produce data with a high innovative potential and may drive incentives for business users and third parties to develop additional services to add to those new interactions.

²³ Alaimo, C., Kallinikos, J., and Valderrama, E. 'Platforms as service ecosystems: Lessons from social media' (2020) *Journal of Information Technology* 35(1): 25-48.

Our focus on interactions accounts for the innovative potential of data and for the complex links that exist between platforms, different types of interactions, different types of data and innovation. Current approaches that insist on platforms as ‘facilitators’ lose sight of their role as data producers and how this, in turn, can trigger innovation at the ecosystem level for all the actors involved. Data are not ‘accessed’ or found out there; they are instead produced through costly organizational and technological efforts.

The DMA seems to implicitly assume that data can be created, accessed, or used at zero cost. While data indeed have low costs of reproduction, producing new data out of novel interactions requires important investments. Even after they have been produced, data do not automatically provide value. They need to be processed, that is data need to be transformed into valuable insights via aggregation and combination with other data via the use of models, tools, and organizational resources.²⁴ For example, TripAdvisor offers data analytics services to small hotels. However, even accessing the same set of data no small hotel alone would benefit from the same data analytics service. Importantly, the process of data value creation rarely happens in the confines of a single organization. The most innovative outcome of data production, as we have seen from our model, occurs when data produced by novel platform interactions provide additional value to existing and latent interactions of users and third parties, initiating a virtuous circle that may lead to the creation of novel services or businesses across the ecosystem.

This means that in most platform ecosystems value is created by (re-)combining data from all three types of interactions across the ecosystem. In this respect, we need to weigh the possible unintended consequences of the proposed approach against the innovation dynamics of

²⁴ Alaimo, C., Kallinikos, J., and Aaltonen, A. ‘Data and value’ (2020) In, S. Nambisan, K. Lyytinen, and Y. Yoo (eds.), *Handbook of Digital Innovation*. Cheltenham: Edward Elgar, pp. 162–178

platform ecosystems. The production of data is linked to complex organizational and technological interdependencies which make it hard to foresee risks and benefits of data-sharing obligations unless such interdependencies are taken into consideration case-by-case.

An agnostic implementation of the current DMA obligations by restricting the platform provider's ability to use or share may jeopardize the platform provider's incentives to make the necessary investments to generate novel and valuable (for all ecosystem participants) data. Based on our framework, we propose to evaluate data access and processing by including potential consequences in terms of lost innovation for all the ecosystem's actors. Obligations to share data produced by existing interactions may have benefits for business users and relatively low cost in term of lost innovation for platform providers and end users as they do not impact the production of data derived from novel interactions and associated novel services. Sharing obligations for data produced by novel interactions may still have benefits for business users but may also have high costs in terms of lost innovation and reduced value creation capacity for platform providers, which in turn would negatively affect end- and business users. Our framework does not consider all data equally valuable for innovation. The risks and benefits of data sharing are not independent from how they are produced. A one-size-fits-all sharing obligation may ultimately harm platform innovation and may end up not being in the best interest of end- or business users.

VI. Potential unintended consequences of the DMA

The DMA neglects the critical implications of platform design for the creation of value and the contingencies of whether the platform is replacing existing interactions, adding to existing interactions or triggering new interactions. This neglect can generate unintended consequences for innovation, but with important implications for competition too. Current developments in the online advertising market might illustrate how important this aspect can be.

The DMA states that ‘a gatekeeper shall refrain from combining personal data sourced from these core platform services with personal data from any other services offered by the gatekeeper or with personal data from third-party services, and from signing in end users to other services of the gatekeeper in order to combine personal data, unless the end user has been presented with the specific choice and provided consent in the sense of Regulation (EU) 2016/679’²⁵.

This is in essence a cross-platform scenario similar to what Apple implemented in September 2020 with the App Tracking Transparency framework (ATT) to its own platform business users, which forces apps to request end-user’s permission to use data for tracking the user or the device (note that ATT does not apply to Apple’s own apps and services).²⁶ While Apple’s ATT applies only to business users operating in the Apple ecosystem, the DMA will extend this policy across all platform providers. This can curtail not just the power of each gatekeeper over its own ecosystem, but also across competing ecosystems to the extent it limits the ability of a gatekeeper to challenge dominance in a core service of another gatekeeper through the creation of novel interactions from combining its core services and data.

One year later the introduction of ATT, with the benefit of hindsight, the digital advertising ecosystem has changed drastically and not in a value-enhancing way. There is initial evidence that the online advertising has lost in terms of efficacy, which means that consumers are watching advertising that is less relevant to them and as a result, engage in lower, less relevant interactions and buy and spend less. The business press reports that acquiring new

²⁵ See DMA, Article 5.a, page 39.

²⁶ For specific details and analysis of the potential anticompetitive effects of this practice see e.g., Sokol D., Zhu F. ‘Harming competition and consumers under the guise of protecting privacy: An analysis of Apple’s iOS 14 policy updates’ (2021) Working Paper available at SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3852744.

customers via digital platforms through advertisement is now for some firms 10 times more expensive than before the ATT implementation.²⁷ Advertisers have reported a rise in ad prices of 25% on average, and a reduction of about 38% in the returns on advertising expenditure as a direct consequence of ATT²⁸. This is a direct result of new ATT-induced problems to measure and assess the performance of advertising campaigns. At the same time, some initial empirical evidence indicates that Apple itself engages in different forms of tracking and, as a result, may reinforce its gatekeeper power²⁹.

If we infer an impact like the one produced by ATT across all platforms, the DMA will condition a complete reorganization of the online digital advertising ecosystem as we currently know it. Some players may move towards traditional media like tv, radio or press. In contrast to the expected benefit of the DMA for end-users, there may be an increase in measuring audience behavior as it will become more difficult to rely on existing interactions across platforms. As a result, we could expect some of the novel interactions facilitated by the current digital advertising model to be hindered, with potential innovation loss, therefore.

Also, we might expect the power of gatekeepers with access to large troves of first-party data to get potentially reinforced. Take the case of Amazon. Nowadays small and medium business merchants that do not want to rely exclusively on Amazon for their ecommerce operations have the alternative of selling directly to their customers using Shopify for web design, Stripe for payment systems and social media targeted advertising to reach their

²⁷ See e.g. Vranica S. 'Apple's privacy change is hitting tech and e-commerce companies. Here's why'. WSJ.com (Oct. 21, 2021), <https://www.wsj.com/articles/apples-privacy-change-is-hitting-tech-and-e-commerce-companies-11634901357?page=2>

²⁸ WSJ.com, cited supra; Koetsier J. 'Apple's privacy changes slashed Ad ROI 38%. This company says they can fix it.' Forbes.com (May 18, 2022), <https://www.forbes.com/sites/johnkoetsier/2022/05/18/apples-privacy-changes-slashed-ad-roi-38-this-company-says-they-can-fix-it/>

²⁹ See Kollnig K., Shuba A., Van Kleek M., Binns R., Shadbolt N. 'Goodbye tracking? Impact of iOS app tracking transparency and privacy labels', Working paper: <https://arxiv.org/pdf/2204.03556.pdf>

audiences. The fact that the efficacy of targeted advertising is so drastically diminished makes less effective this alternative configuration of ecommerce interactions compared to those structured by the Amazon platform marketplace. As a result, Amazon, as a specialized platform vertical in ecommerce, with direct access to data from its core services, would see its power as the sole gatekeeper for ecommerce reinforced.

VII. Concluding remarks

In this paper we considered the merits of the recent EU's Digital Markets Act from an innovation, value creation perspective. We argued that the business model agnostic approach to digital platforms taken in the DMA would miss out on the critical role that platform design and governance play for the creation of value. A proper application of the DMA regulatory framework should account for not just how value is distributed among economic actors in a given context, but also, and importantly so, for how value gets created, along with the context wherein it takes place. Our innovation perspective on the DMA provides such a framework and offers a way for assessing some of the most contentious and relevant design and governance practices put in place by gatekeepers. As our framework shows in the context of self-preferencing and data-sharing, there is heterogeneity in those practices, with some being critical for value creation while others might only affect redistribution of value and have little to do with innovation. Thus, lumping all those practices in one bucket and forbid them tout-court cannot be an effective means, according to our innovation framework, to address current concerns about fairness and contestability in digital markets.