# Economic Impact of the Digital Markets Act on European Businesses and the European Economy

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# Executive Summary

This report evaluates the impact of the **Digital Markets Act ("DMA")** on European businesses and the broader EU economy. Specifically, it assesses how changes mandated by the DMA on digital services platforms designated as "gatekeepers" have affected businesses using widely adopted core platform services such as **online search, online advertising, intermediation, and social networking.**

**Quantified economic impact:**

**The adverse effects of the provisions of the DMA on the most widely used digital platform services lead to measurable economic losses for businesses.**

The DMA provisions could lead to potential **revenue losses up to 114 billion** for firms in service sectors across the EU from the loss of efficiency of the most widely used digital services platforms. This corresponds to a loss up to **0.64% of the total turnover** of the sectors considered. The losses come from less personalization, lower reach, higher transaction costs, loss of valuable integrations and depend on the intensity with which digital platform services tools are being used across sectors and firms. These estimations do not incorporate the additional operational and marketing costs arising from the efficiency losses associated with the DMA provisions. These costs are difficult to estimate due to limited data availability.

**Revenue per worker** across the services sectors considered is estimated to drop by **up to EUR 1,122 per year** due to reduced efficiency in digital marketing, online sales, and customer acquisition.

**Sector specific impact** depends on the share of online sales in total turnover and the intensity of the usage of digital platform services. It could vary between 0.1% of total sector turnover for professional services and 3.6% of total turnover for accommodation services that heavily rely on digital platform services.

**The economic impact on the retail and accommodation sectors is substantial.**

The **accommodation sector** may face losses of revenues between **EUR 1 billion and EUR 14 billion**, with a loss in revenue per worker up to **EUR 3,579 per year.**

The **retail sector** could lose between **EUR 4.4 billion and EUR 59 billion** in revenues with losses in revenue per worker up to **EUR 1,122 per year**.

**Digital platform services enable efficient value creation by enabling interactions, delivering data insights, and coordinating platform participants for higher overall service efficiency (Part II).** Digital services platforms are more than intermediaries; they act as organization structures that orchestrate interactions between users and businesses, facilitate data flows, and enable the valuable integration of tools and services. Digital platform owners solve market failures such as matching inefficiencies, coordination breakdowns, and underinvestment in quality or innovation by establishing governance rules, producing and sharing data insights, and managing incentives. Through targeting and personalization, trust enhancing tools, recommendation systems, and shared technology, digital platforms services have expanded market reach, reduced customer acquisition costs, and supported quality increases and new business models across sectors. These services are particularly critical for SMEs, which often lack the resources to build complex digital infrastructures on their own.

**The DMA breaks many of the mechanisms through which these efficiencies are achieved (Part III).** While the DMA seeks to promote fairness and contestability, many of its provisions restrict the tools platforms use to generate value. Rules that prohibit data integration, ranking optimization, or first-party service integration disrupt the ability of platforms to orchestrate their ecosystems effectively. The prohibition on self-preferencing in ranking, the limits on user data combination across services, and restrictions on integrations weaken the ability of platforms to personalize content, promote more valuable businesses and complementors, and offer integrated services that streamline transactions. These disruptions undermine the incentives for co-investment with business users and diminish the quality and coordination that platforms have historically delivered to businesses and end users.

**Businesses that are heavily reliant on platform services for discovery and transaction efficiencies suffer immediate costs from the DMA's impairment of the services they use. Their reach, discovery opportunities, and transaction efficiencies are diminished (Part IV).** The DMA has led to reduced opportunities for free visibility on search engines, lower effectiveness of personalized advertising, and higher costs for digital marketing, and higher transaction costs. For example, the demotion of free listings on Google Search and the suppression of personalized targeting in Meta's advertising services have reduced conversion rates and increased reliance on costly intermediaries. Similarly, changes to ranking systems in intermediation services and the elimination of social graph integrations decrease user engagement, content relevance, and the effectiveness of business outreach. These effects impose new barriers for those firms that rely on digital platforms to compete with larger incumbents.

**At the level of the EU economy, the average revenue loss of those businesses using online platform services to sell to end users lies between 0.05% and 0.64% of the aggregate revenue of these sectors or EUR 8.5 billion and EUR 114 billion. (Part V).** By sector, this can represent losses between 0.01% and 3.59% of total revenues, depending on the sector share of online commerce and the intensity of their usage of digital platform services. This loss of revenue across the EU leads to a **decline in revenue per worker up to EUR 1 122 per year** depending on sector and usage intensity, a loss that may have long-term implications for the competitiveness of the most impacted sectors. Smaller businesses will find it more difficult to strategically adapt.

**Promoting entry of competition at the platform services level may be weighed against these costs. They represent trade-offs that should be factored in.** The DMA aims to create space for new competitors by reducing incumbent advantages. However, this comes at the cost of lower platform efficiency, weaker user experiences, and diminished incentives for platform participants to invest in innovation or service quality. While some provisions may facilitate entry and support future competition, the immediate loss of value must be acknowledged. The decline in the functionality and efficiency of core platform services should not be seen as an inevitable or acceptable cost of regulatory change. Any long-term gains from greater market contestability must be sufficiently large and rapid to justify the short-term economic losses already being felt across the business landscape.

**An evaluation of the rationale for the platform organization and of the benefits they generate is probably needed for a careful implementation of the DMA. In some instances, promoting platform differentiation and inter-platform competition might be a more efficient solution to the problem of entry and choice.** The assumption that the separation of platform services naturally fosters competition overlooks the organizational logic and efficiency benefits of integrated platform ecosystems. Rather than seeking to disaggregate these ecosystems, policymakers might explore ways to support inter-platform competition, encouraging differentiation in services, governance models, and monetization strategies. A more nuanced regulatory framework could preserve the value-creating mechanisms of digital platforms while still advancing goals of fairness, choice, and contestability.

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# I. Introduction

The Digital Markets Act ("DMA") adopted by the European Union legislative bodies came into force on November 1, 2022, and became applicable on May 2, 2023.[1] The regulation introduces a set of 21 provisions on the "core platform services" ("CPS") provided by online digital services companies designated as "gatekeepers". There are ten core platform services listed in the Regulation and the overarching objective of the provisions is to ensure fairness and contestability in these services. [2]

A company is designated as "gatekeeper" based on its economic significance and its role as intermediary between businesses and users in one or more CPS.[3] A set of criteria determines the qualification of a large online digital service provider as a "gatekeeper". These are online service providers that have (1) a strong economic position and a significant impact on the EU internal market with activity in multiple EU countries; (2) a strong intermediation position, connecting a large user base to a large number of businesses; and (3) an entrenched and durable position in the market, evidence by consistent and stable significant presence over time.

On 6 September 2023 the European Commission ("EC") designated six "gatekeepers" - Alphabet, Amazon, Apple, ByteDance, Meta, and Microsoft- for a total of 22 proprietary CPS. On 13 May 2024, The EC designated Booking for its intermediation service.

The DMA's provisions should in principle benefit both individual and business users through greater diversity and choice in digital services. While it remains too early for a comprehensive assessment of the DMA full economic impact, it is appropriate to start evaluating the impact of its provisions on the services subject to the regulation and the businesses that depend on them.

This paper focuses on the changes to the CPS regulated under the DMA that are most used by European businesses. These are *online search*, *online advertisement*, *online intermediation services*, and *social networking* services. Two years after the

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[1] Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on Contestable and Fair Markets in the Digital Sector (Digital Markets Act). Official Journal of the European Union, L 265, 1–66.

[2] The Core Platform Services subject to DMA regulation are online intermediation services; online search engines; online social networking services; video-sharing platform services; number-independent interpersonal communications services; operating systems; web browsers; virtual assistants; cloud computing services; and online advertising services.

[3] Article 3 of the Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on Contestable and Fair Markets in the Digital Sector (Digital Markets Act). Official Journal of the European Union, L 265, 1–66.

initial implementation deadlines, the designated "gatekeepers" continue to be the most widely used services in the EU.[4] This paper therefore focuses on the impact of the DMA on these services and on the businesses that use them. It does not intend to provide a final evaluation of the impact of the DMA but offers a first assessment based on implementation to date.

The paper concludes that the DMA has imposed significant costs on European businesses due to a loss of efficiency and functionality of the affected digital platform services.

Effects can be estimated for firms across the EU, with its impact depending on regional and sectoral adoption rates for these platform technologies. The estimated impact is an aggregate loss of revenue ranging from a very bare minimum of EUR 8.5 billion if we consider only the effect on personalized ads and EUR 114 billion if we account for the adoption of more sophisticated online services and tools.

These findings are relevant for the review of the DMA in 2026. The DMA should in principle support the competitiveness of European businesses with better choices of digital services. Benefits from the DMA in terms of future entry and innovation will have to compensate for the higher costs to businesses from the lower efficiency of the online digital services provided by designated companies, which they continue to use.

Section II presents the analytical framework explaining how value is created by online digital services platforms and the mechanisms necessary to sustain this value. The section also categorizes the benefits that these digital services platforms provide to businesses. Section III describes the provisions of the DMA and the concrete ways they risk impairing some of the benefits provided by digital platform services. Section IV describes how the different CPS are impacted by the DMA and presents empirical evidence of the economic impact on business users. Section V provides an estimate of the magnitude of the aggregate impact of the loss in the efficiency of the digital platform services on European businesses and the European economy.

[4] See list of designated VLOP by the European Commission under the DSA as of February 6, 2025. https://digital-strategy.ec.europa.eu/en/policies/list-designated-vlops-and-vloses

# II. Digital services platforms reduce costs for businesses and enable new services

The DMA affects how platform owners can govern their digital services platform. It also restricts their usage of data and constraints their platform's architecture by restricting integrations or granting access. However, it overlooks the role that platform governance, data, and platform architecture play in supporting platform value creation. As a result, the DMA fails to account for the way its provisions may affect the value of services provided on digital services platforms.

This section explains how value is created on digital services platforms, providing a foundation for understanding the DMA's impact on digital services and their business users. It presents the main elements controlled by the platform owner supporting the value creation process: the platform rules and governance, the platform data, and the platform architecture including the platform owner's integration decisions. Finally, it describes the benefits that digital services platforms generate for its users, such as greater market reach, greater product relevance, lower costs, access to innovation, and higher quality.

We use the following terminology:

- "Digital platform service" or "digital platform" refers to the CPS provided by the digital platform. For example, online search or online advertisement services are digital platform services.
- "Digital platform owner" or "platform owner" refer to the business that controls the CPS. These are, for example, Microsoft, Meta, or ByteDance.
- "Digital services platform" or "digital platform ecosystem" refer to the ecosystem of services the CPS supports. It includes complementary services and features provided by the digital platform owner and by third-party businesses. An ecosystem would comprise all the services that read into the Facebook social networking service or the Booking reservation platform.

For example, Microsoft (digital platform owner) owns social networking service LinkedIn (digital platform service). LinkedIn's digital services platform includes, among other services and features, the direct messaging system, the online advertisement service, and the training or human resources services that users find on the LinkedIn platform.

## A. How Digital Services Platforms Create Value

Regulators' understanding of digital services platforms has largely been shaped by industrial organization economists, who frame digital platforms as venues where distinct user groups interact to transact. This perspective considers the network effects arising from the platforms' two- or multi-sided nature as the main drivers of value. Network effects are typically treated as structural forces that can lead to outcomes like "winner takes all".[5] The focus of this research has been on barriers to competitive entry, including user switching costs, and ways by which platform owners can leverage these network dynamics to entrench or expand their market position. Lately, behavioral considerations such as 'consumer inertia' have extended consumer 'lock-in' considerations to cover cross-market effects.

A complementary view treats digital platform services as infrastructure—akin to utilities—that connect businesses and users, or users with each other.[6] This perspective separates the core platform service (CPS) from the services it enables, such as a marketplace on a social networking platform or advertising services. These are seen as distinct, albeit complementary, services that "plug into" the platform. This research typically supports regulatory measures modeled on the access and neutrality rules for public utilities.

These two frameworks have significantly influenced regulators' views and informed both competition policy and the design of the DMA. However, more recent interdisciplinary research suggests that they oversimplify how value is created on digital platforms and underestimate the complex interdependencies among platform participants.

### 1. Platforms Owners Organize Joint Value Creation on Digital Platform Ecosystems

[5] Paul Belleflamme and Martin Peitz, *The Economics of Platforms* (Cambridge University Press, 2021).; Bruno Jullien and Wilfried Sand-Zantman, "The Economics of Platforms: A Theory Guide for Competition Policy," *Information Economics and Policy*, Antitrust in the Digital Economy, 54 (March 1, 2021): 100880, https://doi.org/10.1016/j.infoecopol.2020.100880.

[6] Rahman, K. Sabeel. "Regulating informational infrastructure: Internet platforms as the new public utilities." *Georgetown Law and Technology Review* 2 (2018): 2. De Streel, Alexandre, and Pierre Larouche. "An integrated regulatory framework for digital networks and services." (2016). Montero, Juan, and Matthias Finger. *The rise of the new network industries: Regulating digital platforms*. Routledge, 2021.

### *Digital Platforms as Hybrid Institutions: Between Firms and Markets*

Emerging research increasingly views platforms as organizational forms situated between fully centralized firms and decentralized markets.[7] Platform owners play an active role in shaping and governing digital services provided or supported by the digital platform but do not fully control the actions of participating third parties.[8] The process is best described as active **joint value creation** by the platform owner and participants in the broader ecosystem.[9]

Digital platform owners coordinate the interactions between the different types of platform users. Unlike the static infrastructure that passively enables transactions, successful digital platforms owners *actively* enable and shape platform interactions. They do so by establishing governance rules that preserve quality and incentivize investment, sharing data insights, and making available technology tools such as software development kits ("SDK").[10] They align the incentives of business users to invest in quality or complementary services – investments that would not occur without the centralized coordination and governance. For example, by integrating a review system, platform owners motivate participating businesses to increase investments in quality. By making available real time

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[7] Michael G. Jacobides, Carmelo Cennamo, and Annabelle Gawer, "Towards a Theory of Ecosystems," *Strategic Management Journal* 39, no. 8 (2018): 2255–76, https://doi.org/10.1002/smj.2904; Tobias Kretschmer et al., "Platform Ecosystems as Meta-Organizations: Implications for Platform Strategies," *Strategic Management Journal* 43, no. 3 (2022): 405–24, https://doi.org/10.1002/smj.3250; Michael G. Jacobides, Carmelo Cennamo, and Annabelle Gawer, "Externalities and Complementarities in Platforms and Ecosystems: From Structural Solutions to Endogenous Failures," *Research Policy* 53, no. 1 (January 1, 2024): 104906, https://doi.org/10.1016/j.respol.2023.104906.

[8] Carmelo Cennamo, "Competing in Digital Markets: A Platform-Based Perspective," *Academy of Management Perspectives* 35, no. 2 (May 2021): 265–91, https://doi.org/10.5465/amp.2016.0048; Liang Chen et al., "Governance and Design of Digital Platforms: A Review and Future Research Directions on a Meta-Organization," *Journal of Management* 48, no. 1 (January 2022): 147–84, https://doi.org/10.1177/01492063211045023.

[9] Jacobides, Cennamo, and Gawer, "Towards a Theory of Ecosystems." Carmelo Cennamo, "Competing in Digital Markets: A Platform-Based Perspective," *Academy of Management Perspectives* 35, no. 2 (May 2021): 265–91, https://doi.org/10.5465/amp.2016.0048; Jonathan Wareham, Paul B. Fox, and Josep Lluís Cano Giner, "Technology Ecosystem Governance," *Organization Science* 25, no. 4 (August 2014): 1195–1215, https://doi.org/10.1287/orsc.2014.0895. Claudio Panico, and Carmelo Cennamo, "User preferences and strategic interactions in platform ecosystems," *Strategic Management Journal* 43, no. 3 (2022): 507–529. Carmelo Cennamo, and Juan Santaló, "Generativity tension and value creation in platform ecosystems," *Organization Science* 30 (2019): 617–641.

[10] Jacobides, Cennamo, and Gawer, "Externalities and Complementarities in Platforms and Ecosystems." ; Erkko Autio, "Orchestrating Ecosystems: A Multi-Layered Framework," *Innovation* 24, no. 1 (January 2, 2022): 96–109, https://doi.org/10.1080/14479338.2021.1919120.David McIntyre et al., "Multisided Platforms as New Organizational Forms," *Academy of Management Perspectives* 35, no. 4 (November 2021): 566–83, https://doi.org/10.5465/amp.2018.0018.

booking features, online search services incentivize the provision of availability information to end users.

Platforms often do not provide most of the services available on their CPS but provide the necessary tools, guidelines, and economic incentives for businesses or complementors to provide those services that align with the ecosystem's needs. This orchestration allows digital services platforms to ensure quality, maintain user experience, and preserve the overall value of their ecosystem while leaving complementors significant room for innovation[11]. For example, Amazon or Booking do not choose the products or hotels they list on their sites but provide the tools, rules, and conditions for sellers and hotels to list the products of their choice under conditions they themselves mostly determine. Similarly, Instagram or TikTok mostly do not contract the content they present but facilitate certain formats and monetization strategies with technology and monetary incentives.

### *Rationale for Digital Services Platforms: Solving Matching, Coordination, and Innovation Problems*

The primary value of digital services platforms lies in their ability to provide coordination mechanisms that address inefficiencies inherent in decentralized interactions.[12] They typically solve for the following issues:

- **Matching Failures** – Traditional markets often fail to efficiently connect supply and demand, particularly when offers are highly differentiated and consumers greatly differ in their tastes. Platforms address this by centralizing transactions, generating data insights, and deploying sophisticated algorithms to match users with relevant product and services. For example, ride-hailing platforms such as Uber and Lyft optimize driver-rider pairings to reduce waiting times and improve customer satisfaction. Better matching grows participation and revenue for platform participants.

- **Coordination Failures** – Independent actors may struggle to cooperate to generate value for end users. Such coordination failures are often due to participants' inability to exchange knowledge, align on standards, or coordinate

[11] Carmelo Cennamo, and Feng Zhu, "Should your company build an open or closed ecosystem?" Harvard Business Review (July, 2024): https://hbr.org/2024/07/should-your-company-build-an-open-or-closed-ecosystem

[12] Jacobides, Cennamo, and Gawer, "Externalities and Complementarities in Platforms and Ecosystems"; Tobias Kretschmer et al., "Platform Ecosystems as Meta-Organizations: Implications for Platform Strategies"

activities for systemic solutions[13] For example, the credibility of a business review system is difficult to establish, and the platform will typically solve for this feature by providing a harmonized review tool. Authentication can also generate user fatigue, and the platform owner enables standardized authentication across the platform. Coordination failures often arise when participants have misaligned incentives, prompting digital platform owner to establish greater control.[14] Coordination failures can be solved with governance rules, technology tools that standardize processes, but also with incentive mechanisms that reward behaviour aligned with the value proposition of the digital platform.

- **Systemic Innovation Failures** – Opportunities for synergies in innovation are many on digital platforms. For example, intermediary services can benefit from messaging or payment services. Calendars can benefit from map functionalities and maps can benefit from marketplace information. Synergies from innovation by third parties requires aligned incentives and shared technology foundations. Platforms foster innovation by providing technology tools such as application programming interfaces ("API") and software development kits ("SDK") that help third parties build well-functioning and well-integrated complementary features and services.[15] This approach has fuelled the explosive growth of digital services in ecosystems such as Microsoft's Azure, LinkedIn, or Instagram. In addition, platform integration decisions and incentive mechanisms can direct

[13] Coordination failures can lead to systemic failure. See Amrit Tiwana, "Platform Desertion by App Developers," *Journal of Management Information Systems* 32, no. 4 (October 2, 2015): 40–77, https://doi.org/10.1080/07421222.2015.1138365.; Joel West and David Wood, "Evolving an Open Ecosystem: The Rise and Fall of the Symbian Platform," in *Collaboration and Competition in Business Ecosystems*, vol. 30 (Emerald Group Publishing Limited, 2014), 27–67, https://doi.org/10.1108/S0742-3322(2013)0000030005.

[14] Carmen Leong et al., "Coordination in a Digital Platform Organization," *Information Systems Research* 35, no. 1 (March 2024): 363–93, https://doi.org/10.1287/isre.2023.1226. Panico, and Cennamo, "User preferences and strategic interactions in platform ecosystems"

[15] Edward Anderson, Geoffrey Parker, Burcu Tan, "Platform performance investment in the presence of network externalities," *Information Systems Research* 25 (2014): 152–172; Geoffrey Parker, Marshall Van Alstyne, and Xi Jiang, "Platform ecosystems: How developers invert the firm," *MIS Quarterly* 41 (2017): 255–266; Carmelo Cennamo, Tobias Kretschmer, Panos Constantinides, Cristina Alaimo, and Juan Santaló, "Digital platforms regulation: An innovation-centric view of the EU's digital markets act," *Journal of European Competition Law & Practice* 14, no. 1 (2023).

innovation efforts toward those areas that increase the value of the digital platform ecosystem.[16]

Digital platform services are not neutral, standardized, technology infrastructures that passively support exchange. Rather, they are purposely designed and actively governed to align autonomous business and individual contributors—often referred to as "complementors"—to produce collective value. This alignment expands the market, reduces inefficiencies, and improves coordination around digital services quality and innovation.

## 2. The Importance of Governance and Platform Rules in the Success of Digital Services Platforms

To maintain efficiency and quality alignment, digital services platforms must establish robust governance structures, including rules and incentive mechanisms. Without effective governance, platforms risk large scale fraud, free-riding, and misaligned complementors that undermine the value proposition.[17] Governance rules provide incentives for preserving quality and innovation, and prevent harmful behaviour.

### *Incentivizing complementors to invest in quality and innovation*

Platform owners use a combination of incentive mechanisms to coordinate around quality and encourage investment and value enhancing behaviour among complementors (for example merchants or content creators).

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[16] Feng Zhu, "Friends or Foes? Examining Platform Owners' Entry into Complementors' Spaces," *Journal of Economics & Management Strategy* 28, no. 1 (2019): 23–28, https://doi.org/10.1111/jems.12303. Amrit Tiwana, *Platform Ecosystems: Aligning Architecture, Governance, and Strategy* (Newnes, 2013). p.108. Tiwana explains how platforms should integrate stable functionalities and those critical to the platform and direct third parties to more experimental areas. "Stable functionality should go in the platform but immature, changing, and evolving functionality should ideally be implemented as app" [i.e. by complementors].

[17] Cennamo, Carmelo, and Juan Santaló. "Generativity tension and value creation in platform ecosystems." *Organization science* 30, no. 3 (2019): 617-641, https://pubsonline.informs.org/doi/abs/10.1287/orsc.2018.1270.Jacobides, Cennamo, and Gawer, "Externalities and Complementarities in Platforms and Ecosystems"; Panico, and Cennamo, "User preferences and strategic interactions in platform ecosystems"

- **Resource Sharing**: Platforms provide platform technology, APIs and SDKs that lower the cost to access technology solutions. These tools help reduce uncertainty for complementors and serve to coordinate their activities.[18]
- **Monetary Rewards**: Revenue-sharing models and performance-based bonuses encourage high-quality contributions, incentivize platform adoption and in turn boost complementors' performance.[19]
- **Visibility & Recognition**: Featured listings, recommendations, and certification programs tied to specialized investment increase these investments and grant exposure and credibility for participating businesses.[20]

For example, Google incentivizes location-based services by making available Google Maps API. Meta incentivizes AR/VR features with a series of SDKs. YouTube incentivizes content creators through ad revenue-sharing, encouraging high-quality video production. Booking incentivizes real time price and availability information to potential customers by providing direct booking tools.

### *Control mechanisms to protect trust and ecosystem integrity*

While platforms encourage participation, platform owners must also impose restrictions to prevent misconduct such as fraud, rating systems manipulation, and free riding on the shared resources of the ecosystem. Platform owners enforce alignment with the platform's overall strategic orientation and value proposition to end users:[21]

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[18] Amrit Tiwana, *Platform Ecosystems: Aligning Architecture, Governance, and Strategy* (Newnes, 2013). Tiwana, "Platform Desertion by App Developers."

[19] Pu Zhao, Georgios Zervas, and Xintong Han, "The Impact of Platform Commission Design on Creators' Pricing Strategy and Productivity," *Technical Report*, no. 2024 (6) (n.d.), https://www.tse-fr.eu/sites/default/files/TSE/documents/conf/2024/postal/han.pdf.; Andrei Hagiu and Julian Wright, "The Optimality of Ad Valorem Contracts," *Management Science* 65, no. 11 (November 2019): 5219–33, https://doi.org/10.1287/mnsc.2018.3180. Panico, and Cennamo, "User preferences and strategic interactions in platform ecosystems"

[20] Joost Rietveld, Melissa Schilling, and Christian Bellavitis, "Platform strategy: Managing ecosystem value through selective promotion of complements," *Organization Science* 30 (2019): 1232–1251. Joost Rietveld, Robert Seamans, and Katia Meggiorin, "Market orchestrators: The effects of certifications on platforms and their complementors," *Strategy Science* 6 (2021): 244–264; Chen Liang, Zhan Schi, and T.S. Raghu, "The spillover of spotlight: Platform recommendation in the mobile app market," *Information Systems Research* 30 (2019): 1296–1318

[21] Adner, "Ecosystem as Structure." Carmelo Cennamo and Juan Santaló, "Generativity Tension and Value Creation in Platform Ecosystems," *Organization Science* 30, no. 3 (May 2019): 617–41, https://doi.org/10.1287/orsc.2018.1270. Andrei Hagiu, "Strategic Decisions for Multisided Platforms," *MIT Sloan Management Review*, December 19, 2013, https://sloanreview.mit.edu/article/strategic-decisions-for-multisided-platforms/.

- **Access Control**: Screening mechanisms ensure only reputable participants join (e.g., Airbnb identity verification). This helps maintain the quality of complementors and prevent opportunistic behaviours.
- **Behavioural Regulations**: Platforms enforce rules to prevent harmful behaviour (e.g., Amazon's policies against fake reviews). For example, platforms can restrict the collection of user contact information to prevent free riding.[22]
- **Performance Monitoring**: Ratings and user feedback are closely followed and automated fraud detection systems are typically deployed to sustain service quality, ensure satisfactory performance from complementors, and reduce the risk of adverse selection.

A clear example of governance in action is Google's search algorithm updates, which penalize low-quality or spam content and discourages manipulative tactics like keyword stuffing. Facebook's moderation of harmful content or a marketplace's enforcement against copycat products are other examples of platforms' efforts to maintain platform quality alignment.

As platforms become more complex, they "naturally" evolve towards centralizing control over a larger variety of interactions to ensure better coordination of innovation and safeguards against free riding problems over the shared platform technology.[23] This is important to preserve the value of the digital services platform and sometimes to prevent platform collapse.[24]

## 3. The Role of Data, Targeting, and Personalization in Value Optimization

Digital platform services facilitate data aggregation and the sharing of data insights across the whole platform ecosystem. Data combination and aggregation enables

[22] Cennamo et al. "Digital platforms regulation: An innovation-centric view of the EU's digital markets act"; Zhang Y., Li J., and Tong T., "Platform governance matters: how platform governance affects knowledge sharing among complementors." *Strategic Management Journal* 33 (2022): 599–626; Jorg Claussen, Tobias Kretschmer, and Peter Mayrhofer, "The effects of rewarding user engagement: The case of Facebook apps," *Information Systems Research* 24 (2013): 186–200.

[23] Tiwana, Platform Ecosystems.

[24] Carmelo Cennamo and Juan Santaló, "Generativity Tension and Value Creation in Platform Ecosystems," Organization Science 30, no. 3 (2019): 617–41. Liang Chen et al., "Governance and Design of Digital Platforms: A Review and Future Research Directions on a Meta-Organization," Journal of Management 48, no. 1 (January 1, 2022): 147–84, https://doi.org/10.1177/01492063211045023. Tobias Kretschmer et al., "Platform Ecosystems as Meta-Organizations: Implications for Platform Strategies," Strategic Management Journal 43, no. 3 (2022): 405–24, https://doi.org/10.1002/smj.3250.

the creation of new more relevant services, facilitates market expansion through personalization, and generates information to increase trust and platform integrity.

### *The value of data*

Data-driven value creation in digital services platforms results from an iterative process of data generation, transformation, and recombination. The process enables novel uses of data and supports the development of new functionalities.[25] Users contribute or generate data through their interactions on the platform, which are then applied to improve service quality for those users but also for everyone else. This extension of the data benefit across platform participants is commonly referred to as data network effects, a form of demand-side economies of scope.[26]

Unlike conventional network effects, where the value of a service increases with the number of users (e.g., a telephone network), data network effects, it is the data that drives the value through improvements in personalization, efficiency, and predictive capabilities of digital platforms services.[27] An example is Netflix's use of viewing data to guide content investment. By analysing patterns – such as the tendency of users who watched David Fincher's films to also enjoy political thrillers as well as Kevin Spacey content – Netflix identified a viable audience and invested heavily in *House of Cards*. This data-driven approach to content development marked a paradigm shift in the entertainment industry.[28] In another example, the generation of new types of data at TripAdvisor, and in particular user generated data, was central to expanding its ecosystem to an increasing variety of businesses.[29]

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[25] Wendy Arianne Günther et al., "Resourcing with Data: Unpacking the Process of Creating Data-Driven Value Propositions," *The Journal of Strategic Information Systems* 31, no. 4 (December 1, 2022): 101744, https://doi.org/10.1016/j.jsis.2022.101744. Cristina Alaimo, Ioannis Kallinikos, and Erika Valderrama, "Platforms as Service Ecosystems: Lessons from Social Media," 2020, https://doi.org/10.1177/0268396219881462.

[26] Robert Wayne Gregory et al., "The Role of Artificial Intelligence and Data Network Effects for Creating User Value," *Academy of Management Review* 46, no. 3 (July 2021): 534–51, https://doi.org/10.5465/amr.2019.0178.

[27] Robert Wayne Gregory et al., "Data Network Effects: Key Conditions, Shared Data, and the Data Value Duality," *Academy of Management Review* 47, no. 1 (January 2022): 189–92, https://doi.org/10.5465/amr.2021.0111. Maximilian Schaefer and Geza Sapi, "Complementarities in Learning from Data: Insights from General Search," *Information Economics and Policy* 65 (December 1, 2023): 101063, https://doi.org/10.1016/j.infoecopol.2023.101063.

[28] Kristin Westcott Grant, "Netflix's Data-Driven Strategy Strengthens Claim For 'Best Original Content' In 2018," Forbes, accessed May 27, 2025, https://www.forbes.com/sites/kristinwestcottgrant/2018/05/28/netflixs-data-driven-strategy-strengthens-lead-for-best-original-content-in-2018/.

[29] Alaimo, Kallinikos, and Valderrama, "Platforms as Service Ecosystems," 2020.

Digital platform services also act as aggregators and brokers of information for their business users. By embedding data-driven functionalities into platform tools—such as targeted advertising—platforms indirectly provide access to the data and actionable insights. These services enhance decision-making and allow businesses to derive value from data they would not otherwise be able to access.

### *Personalization and Market Expansion*

The collection and processing of user data can be used to improve the quality of matching or offer targeted and personalized content, products, or commercial offers to users.[30] Optimized matches increase the user engagement with the platform and the quality of the service they receive.[31]

Personalized marketing "at scale", i.e. reaching a large mass of potential consumers with personalized messages and offerings, has been found to increase the return on marketing investment by online advertisers by 10-30%.[32] The market expansion effect of personalization is demonstrated by the substantial investments made by a variety of actors in hyper-personalization services for highly-tailored customer experiences.[33] Personalization and targeting can also simplify user choice by presenting or highlighting more relevant content (e.g. through the ranking of search results or recommender systems).[34]

Examples of data used for personalization include:

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[30] C Lehrer, Ioanna Constantiou, C Matt, T Hess. "How Ephemerality Features Affect User Engagement with Social Media Platforms," *MIS Quarterly* 47 (2023)

[31] Ioanna Constantiou, "Digital competition and user engagement: how do the user engagement strategies of social media platforms contribute to value creation?" in *Research Handbook of Digital Strategy* (2023); Andrei Hagiu and Julian Wright, "Data-enabled Learning, Network Effects, and Competitive Advantage," *The RAND Journal of Economics* 54, no. 4 (December 2023): 638–67, https://doi.org/10.1111/1756-2171.12453.

[32] https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/marketings-holy-grail-digital-personalization-at-scale

[33] Oliver Guirdham, "Global Hyper Personalization Market Set For 17.9% Growth, Reaching $42.14 Billion By 2028," EIN Presswire, December 10, 2024, https://www.einpresswire.com/article/767427242/global-hyper-personalization-market-set-for-17-9-growth-reaching-42-14-billion-by-2028. "The hyper personalization market has seen a swift surge in recent years. It is estimated to grow from $18.49 billion in 2023 to $21.79 billion in 2024, reflecting a compound annual growth rate CAGR of 17.8%...Hyper-personalization enhances the e-commerce ecosystem by delivering tailored shopping experiences, improving customer engagement, and boosting conversion rates through personalized product recommendations and targeted marketing strategies."

34 Baojun Jiang and Tianxin Zou, "Consumer Search and Filtering on Online Retail Platforms," Journal of Marketing Research 57, no. 5 (October 1, 2020): 900–916, https://doi.org/10.1177/0022243720928367.

- **Social Media Advertising**: Platforms like Facebook and Instagram use user-generated data to help advertisers target specific demographics, increasing ad effectiveness.
- **Online Marketplaces**: Airbnb uses past booking behaviours, reviews, and location preferences to suggest optimal accommodations.
- **Content Streaming**: Spotify analyses usage patterns to recommend content tailored to individual preferences.[35]

### *Information and Trust*

Beyond matching, platforms use data to lower transaction costs by reducing uncertainty. Data enables reputation systems, quality ranking mechanisms, and trust-building features. For example, platforms like eBay and Etsy rely on user ratings to establish seller credibility, reducing buyers' risks and enhancing trust.

Data-enabled fraud and anomaly detection systems work to decrease harmful or fraudulent behaviour. They increase consumer trust and encourage platform participation by individual and business users, increasing service quality. For example, Airbnb systems protect hosts by flagging reservations made shortly before users' 18th birthday in their city of residence as "at risk" of a party event. [36]

## 4. Digital Platform Architecture and Integrations

The architecture of a platform is the underlying structure of a platform: it describes how it divides the tasks in the value generation process.[37] It defines the 'stable core' of the platform composed of the stable shared elements provided by the platform itself and the more variable components.[38] It also defines the "linkages" between platform and contributors and among contributors and so is a crucial coordination mechanism.

Integrations occur when two services are connected so that they can "call" on each other, typically with an API, and are able to become coordinated. An example is the integration of maps, traffic data insights, and calendar services that enables a

35 Spotify Engineering, "How Spotify Uses ML to Create the Future of Personalization," Spotify Engineering, accessed May 27, 2025, https://engineering.atspotify.com/2021/12/how-spotify-uses-ml-to-create-the-future-of-personalization.

36 "Airbnb Uses AI to Reduce Host Complaints, Personalize Travel Planning," EMARKETER, accessed May 27, 2025, https://www.emarketer.com/content/airbnb-uses-ai-reduce-host-complaints-personalize-travel-planning.

37 Tiwana, Platform Ecosystems. Chapter 5.

38 Carliss Y. Baldwin and C. Jason Woodard, "Chapter 2: The Architecture of Platforms: A Unified View," 2009, https://www.elgaronline.com/edcollchap/9781848440708.00008.xml.

service notifying users of a recommended departure time. Similarly, the integration of flights, hotels, and car rentals reservations may reduce transaction costs for consumers.

Digital services platforms have numerous opportunities for efficient integrations and continuously evolve integrating new services and adding functionalities to their core platform services.[39]

The potential for anti-competitive harm from a platform integrating or promoting its own complementary services has been extensively discussed.[40] However, research shows that the decision to integrate a first party service or feature may also be an efficient choice. Integration of first party services may:

- **Increase the quality of complementary services.** Integrations may provide better quality when the co-development of the services' technology or the sharing of data is important for the product quality. Integrating into first-party complements may inform other on the best use the platform's core technology and prevent defection of third parties.[41] For example, first-party games can show the technology potential of the platform, stimulate adoption of the console by consumers, and hence provide incentives for complementors to develop more games.[42] First-party complements can help "prop up" a market niche in which a platform is relatively weak compared to competing platforms.[43] For example, first party sales of the JD.com e-commerce platform were found to increase sales and profit for third party suppliers for those products where the platform's market potential was moderate and demand spillovers were strong.[44]

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39 Cennamo, "Competing in digital markets: A platform-based perspective"; Annabelle Gawer, "Digital platforms' boundaries: The interplay of firm scope, platform sides, and digital interfaces," Long Range Planning 54 (2021); Eisenmann, T., Parker, G., Van Alstyne, M., "Platform envelopment," Strategic Management Journal 32 (2011): 1270–1285.

40 Luis M. B. Cabral et al., "The EU Digital Markets Act: A Report from a Panel of Economic Experts," SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, February 9, 2021), https://papers.ssrn.com/abstract=3783436.

41 Hakan Ozalp, Carmelo Cennamo, and Annabelle Gawer, "Disruption in Platform-Based Ecosystems," Journal of Management Studies 55, no. 7 (2018): 1203–41, https://doi.org/10.1111/joms.12351.

42 Carmelo Cennamo, "Building the Value of Next-Generation Platforms: The Paradox of Diminishing Returns," *Journal of Management* 44, no. 8 (November 1, 2018): 3038–69, https://doi.org/10.1177/0149206316658350.

43 Alexey Rusakov and Tobias Kretschmer, "First-Party Complements in Platform Markets: The Role of Competition," *Academy of Management Proceedings* 2023, no. 1 (August 2023): 19036, https://doi.org/10.5465/AMPROC.2023.19036abstract.

44 Yiting Deng et al., "Can Third-Party Sellers Benefit from a Platform's Entry to the Market?," *Service Science* 15, no. 4 (December 2023): 233–49, https://doi.org/10.1287/serv.2023.0324.

- **Preserve the integrity of the platform.** Platform owners may integrate services where third parties are underperforming or not aligning with the value proposition of the digital services platform. For example, both Apple and Google Android integrated free weather apps in their mobile operating systems to respond to the low quality of free third-party weather apps that engaged in extensive and undisclosed user data collection.[45]

- **Decrease third parties' duplicative effort.** Platform owners may disincentivize third parties' additions to the platform that do not contribute to user value.[46] Digital platform services direct third parties' efforts to further build the digital services platform rather than have businesses 'race each other to the bottom' while adding little additional value to users. Excessive competition on platforms has been shown to decrease innovation and quality of services on a platform.[47]

- **Differentiate.** Integrations that are automatically offered to consumers can also serve as a differentiating factor of the digital platform service.[48] For example, the integration of the AI tool Copilot in Microsoft productivity services is a recognizable feature for consumers.

## B. Benefits of Digital Platform Services to Business Users

Digital services platforms create value by enabling and governing useful user interactions, using data insights, and sharing digital technologies and tools. In doing so, they solve matching, coordination, and innovation failures that would otherwise arise and benefits both business and end users through greater market reach, more relevant products and services, higher efficiency, and higher quality.

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[45] Jason Koebler, "Stop Using Third-Party Weather Apps," *VICE* (blog), January 4, 2019, https://www.vice.com/en/article/stop-using-third-party-weather-apps/. ; "AccuWeather iOS App Privacy Issues: Lessons & Takeaways - NowSecure," accessed April 5, 2025, https://www.nowsecure.com/blog/2017/09/01/accuweather-ios-app-privacy-issues-lessons-takeaways/.

[46] Feng Zhu, "Friends or Foes? Examining Platform Owners' Entry into Complementors' Spaces," *Journal of Economics & Management Strategy* 28, no. 1 (2019): 23–28, https://doi.org/10.1111/jems.12303.

[47] Andrei Hagiu, "Strategic Decisions for Multisided Platforms," *MIT Sloan Management Review*, December 19, 2013, https://sloanreview.mit.edu/article/strategic-decisions-for-multisided-platforms/. Kretschmer et al., "Platform Ecosystems as Meta-Organizations," 2022. Cennamo and Santaló, "Platform competition: Strategic trade-offs in platform markets"

[48] Carmelo Cennamo, "Competing in Digital Markets: A Platform-Based Perspective," *Academy of Management Perspectives* 35, no. 2 (May 2021): 265–91, https://doi.org/10.5465/amp.2016.0048.

Table 1 below summarizes key benefits that digital services platforms offer business users.

**Table 1- Benefits of Digital Platform Services for Business Users (Complementors)**

| Increasing Efficiency and Quality | |
|---|---|
| **Greater Market Reach** | • **Access to a Large User Base**: Platforms connect businesses to a broad audience, expanding market reach and customer acquisition.<br>• **Promotion & Visibility**: Platforms enhance discovery of businesses aligned with the value proposition presented to users. Provided through platform-driven recommendations, featured listings, or as premium service options. |
| **Personalization and Relevance** | • **Market and Customer Insights**: Platforms services provide valuable data on user behaviour, demand trends, and interactions with the digital services platform. This helps complementors refine their offerings and make informed investment decisions. |
| **Process Optimization** | • **Clear Rules & Standardized Engagement**: Platforms services standardize interactions and membership criteria reducing costs and uncertainty of platform participation, and encouraging investment by businesses.<br>• **Facilitated Transactions**: Platforms provide tools to reduce transaction costs including product search, product information, payment/shipping logistics, or customer messaging. |
| **Trustworthy and High-Quality Ecosystem** | • **Access Control Mechanism**: Platforms can ensure that only reputable, aligned complementors join, enhancing platform credibility and the overall customer experience.<br>• **Consumer Trust Mechanisms**: Platforms provide feedback and rating systems that enhance consumer trust and reduce risks associated with low-quality offerings.<br>• **Rewards for Quality Investments**: Platforms often promote complementors that bring more value to users increasing their engagement and revenues.<br>• **Detection of Malicious Activities**: Behavioural controls prevent fraud, manipulation, and unfair competition, fostering a fair and secure business environment. |

| | |
|---|---|
| | • **Ongoing Quality Control**: Platforms track performance and monitor activity to maintain consistent service quality and prevent deterioration due to subpar offerings. |

| Enabling Innovation and Generating New Services | |
|---|---|
| **Expansion of Markets** | • **New markets**: Platforms create entirely new connections between businesses and customers by creating new ways of interacting. An example is a location-based service. |
| **Effective Innovation Process** | • **Shared Technology Infrastructure**: Platforms provide a common technology support that is typically costly to build.<br>• **Platform Tools**: Platforms provide essential resources such as APIs and SDKs, reducing development costs and lowering barriers to entry for new participants.<br>• **Innovation incentives**: Platforms incentivize innovation with innovation contests, open-source technology, and optimization of core technologies for external innovation. |
| **Long-Term Support for High-Quality Ecosystems** | • **Sustainability:** Platforms deploy governance mechanisms that preserve platform stability and prevent disengagement over time including conflict resolution mechanisms, revenue-sharing models, and intellectual property protections. |

# III. The DMA disrupts the organization of successful online digital services platforms

The DMA provisions grant new rights to business users of the digital platforms services and aim to prevent platform services' owners from using data and integrations to gain advantage in the provision of complementary services. These provisions are designed to prevent large digital platforms designated as "gatekeepers" from developing an ecosystem that would lock in users within the

platform's own services, making entry of alternative providers more difficult. To achieve this, the DMA provisions impose non-discriminatory access to the platform core service, forbidding the platform owner from giving preferential treatment to its own complementary services. The DMA also rebalances commercial terms on the platforms by granting business more rights than might be typically granted by platforms owners. These include the right for full pricing flexibility, the right to access the data generated by their customers, or the right to disintermediate the digital platform service by taking a user outside of the digital platform ecosystem to conclude a contract.

## A. The provisions of the DMA impacting digital services used by EU businesses

The DMA provisions deeply impact digital platform services commonly used by European businesses to expand their customer base and grow. They impact these services' ability to combine and use data, restrict the ability of platform owners to govern the platform, and prevent integration of first party services.

Article 5(2) of the DMA prohibits "gatekeepers" from processing personal data of end users across different core platform services or from third-party services for advertising purposes without the end user's explicit consent. The restriction extends more generally to combining or cross-using personal data across services or signing in users across services to aggregate their data, without consent.

Article 5(3) prohibits the imposition of price parity and most favoured nation ("MFN") clauses and measures with equivalent effect on business users and Article 5(4) requires "gatekeeper" platform owners to allow business users to promote out-of-platform offers to end users as well as contract and complete transactions with end users outside the gatekeeper's platform.

Articles 5(7) and 5(8) restrict tying practices. "Gatekeepers" cannot require business users or end users to use, offer, or interoperate with the "gatekeeper's" identification service, web browser engine, or payment service as a condition for using the core platform service (Article 5(7)), nor can they require users to subscribe to or register with another core platform service as a condition for accessing any of the gatekeeper's services (Article 5(8)).

Also to weaken connectedness across services, Article 6(3) requires "gatekeepers" to allow end users to change default settings on virtual assistants, web browsers, search engines, or operating systems. Article 6(5) prohibits "gatekeepers" from

favouring their own products or services in rankings over those of third parties and mandates transparent, fair, and non-discriminatory ranking conditions. Article 6(6) ensures that "gatekeepers" cannot restrict end users from switching between or subscribing to different apps and services accessed via their platform.

Several DMA provisions support transparency and data sharing. Article 5(9) obliges "gatekeepers" to provide advertisers with information on the prices paid for online advertising services and remuneration paid to publishers. Article 5(10) requires providing publishers with information on fees and prices for online advertising services. Furthermore, Article 6(8) obliges "gatekeepers" to provide advertisers and publishers, as well as third parties authorized by them, with access to the gatekeeper's performance measuring tools and the data necessary for independent verification of ad inventory.

Article 6(9) gives end users, and third parties authorized by them, the right to effective data portability, including real-time and continuous access to data they have provided or generated through their use of the core platform service. Article 6(10) provides business users with real-time access to customer data generated in the context of their use of the platform, subject to data protection rules.

Finally, Article 6(12) requires "gatekeepers" to provide fair, reasonable, and non-discriminatory access for business users to their app stores, search engines, and social networking services

## B. Impact of the DMA on those digital platform services most used by businesses in the EU

The provisions imposed by the DMA effectively reorganize the digital platform services in scope and disrupt the platform owners' efficient organization of the digital platform ecosystem they support. The disruption results in loss of value and efficiency, creating significant trade-offs between promoting competition across these digital services and maintaining their efficiency for business users.

The following table presents a summary overview of the platform efficiencies that are disrupted by the different DMA provisions as well as their likely impact on business users. In the next sections, we describe these effects in more detail and present evidence of their impact.

**Table 2 - Impact of the DMA on Digital Platform Services and Business Users**

| Digital Platform Service | Designated Companies | Degraded Platform Benefit Post-DMA | Potential Negative Effect on Businesses |
|---|---|---|---|
| Online Advertising Services | Meta<br>Google<br>Amazon | *Reach*<br>Loss of reach from inability to target users that opted out of data being used for advertisement.<br>*Personalization and Relevance*<br>Less relevant advertising for users who have opted out of data combination.<br>Less relevant advertising due to limits to data integrations, which decreases the data insights provided to businesses. | Less efficient direct marketing and lower revenues per ad spent for advertisers with limited access to first party data.<br>Increased reliance on more expensive intermediary ad services.<br>Higher transaction costs from required consents for sharing user data with platform service.<br>Higher cost of GDPR compliance if advertiser opts for first party data.<br>Higher cybersecurity risks if more first party personal data are collected. |

| Digital Platform Service | Designated Companies | Degraded Platform Benefit Post-DMA | Potential Negative Effect on Businesses |
|---|---|---|---|
| **Online Search Services** | Google Search | *Reach*<br><br>Reduced platform owners' incentives to provide free promotion and discovery tools.<br><br>*Personalization and Relevance*<br><br>Less relevant result page.<br><br>Less personalized services due to loss of ecosystem data combination.<br><br>*Process Optimization*<br><br>Less efficient and more complex user interface and higher search and transaction costs.<br><br>Fewer integrated features such as booking tools or maps decreasing process optimization.<br><br>Increased friction from user consent requirements.<br><br>*Trustworthy and High-Quality Ecosystem*<br><br>Possible reduction of quality control due to the expansion of access to third parties.<br><br>Lower efficiency of coordinated tools (e.g. reviews). | Increased cost of direct marketing and possible loss of free direct marketing options.<br><br>Higher reliance on more costly intermediation services.<br><br>Increased cost of operations due to more complex environment (more distribution channels to manage).<br><br>Loss of features and integrations may decrease conversion rates: e.g. direct booking, location services. |

| Digital Platform Service | Designated Companies | Degraded Platform Benefit Post-DMA | Potential Negative Effect on Businesses |
|---|---|---|---|
| **Social Networking Services** | Instagram<br>Facebook<br>TikTok<br>LinkedIn | *Reach*<br>Loss of reach from preventing social graph to be used for valuable complementary services.<br>*Relevance and Personalization*<br>Less relevant and personalized services from preventing user data from being combined across services.<br>*Process Optimization*<br>Fewer features and social graph integrations that increase demand for complementary services (gaming, dating, hiring).<br>Increased friction from user consent requirements.<br>*Trustworthy and High-Quality Ecosystem*<br>Potential loss of integrity from loss of data signals.<br>Lower level of trust from less control of access by third party services. | Less efficient direct marketing.<br>Potential drop in engagement and revenues from less efficient personalization of feeds.<br>Loss of social features for some products or users (e.g. multi-player gaming).<br>Decrease engagement and revenues from consent boxes added friction.<br>Loss of integrations lowering engagement and revenue of content providers or businesses (e.g. loss of messaging integrations).<br>A potential forced pivot towards fee-based business models due to more difficult ad monetization reduces demand and users. |

| Digital Platform Service | Designated Companies | Degraded Platform Benefit Post-DMA | Potential Negative Effect on Businesses |
|---|---|---|---|
| **Online Intermediation Services** | Google<br>Meta<br>Amazon<br>Booking<br>[Apple][1] | *Reach*<br>Less relevant recommendations for users and otherwise sub-optimal recommendation criteria.<br>*Relevance and Personalization*<br>Less personalized ranking<br>*Process Optimization*<br>Higher transaction costs from loss of service integrations that benefit users.<br>*Trustworthy and High-Quality Ecosystem*<br>Less investment in quality due to the reduction of rewards for investment perceived as discriminatory.<br>Misalignment in value proposition to users across businesses may turn customers away.<br>Lower quality from diminished platform owners' investment incentives due to possible platform disintermediation. | Lower demand and revenue for aligned businesses due to less curated result page.<br>Less features and integrated services that attract users.<br>Higher costs for businesses due to less integrated productivity services.<br>Commoditization due to lower ability to differentiate through platform programs and lower incentives to invest in quality. |

# IV. Negative Impact of DMA Provisions on Digital Services Platforms and their Business Users in the EU

This section presents concrete evidence that the Digital Markets Act (DMA) has introduced substantial disruptions to several core platform services, including search, advertising, intermediation, and social networking services. The findings indicate that, while the regulatory aim is to increase fairness and contestability, the imposed provisions have impaired core functionalities that business users heavily rely on. These impairments are not theoretical—they result in measurable declines in efficiency, service quality, and user engagement.

The analysis shows that restrictions on self-preferencing in ranking, cross-service data use, and interoperability requirements have decreased direct visibility and website traffic, reduced targeting precision in advertising, and fragmented user experience across services.

These impacts concern all European businesses that still rely on the largest platforms for their online digital services, but they are particularly felt those businesses that are not large enough to invest in compensating strategies.

## A. Online Advertisement Services

Article 5(2) of the EU Digital Markets Act (DMA) prohibits "gatekeepers" from combining and cross-using personal data across "core platform services" without explicit user consent. This requirement overrides otherwise accepted legal justifications under the GDPR, such as legitimate interest, on which platform owners might typically rely to process user data. Stricter than the GDPR, the intent of the DMA is to ensure that all users of a designated platform's CPS make informed decisions about the collection and subsequent use of their data, particularly for the purpose of personalized advertising

While the benefits for privacy-conscious users are evident and have been discussed at length, the opt-in requirement introduces potentially non-negligible costs and efficiency losses for advertisers, especially smaller firms with limited first party data and targeting capabilities.

Ad monetization with less efficient ads can only be sustained with significantly more ads in the organic content. This comes at a cost in terms of the user

experience and the overall value of the digital platform service. Business models that are heavily reliant on efficient advertising for monetization may have to revise their business model[49]. For example, Meta has proposed a model in which users can choose between fully personalized advertising at no cost or no advertising at all at a subscription fee. This model has been rejected by the EC and the possible inclusion of the option to receive free services with less efficient non-personalized ads is being considered.[50]

We describe in more detail the impact of the provisions on online advertising services and on advertisers.

### 1. Loss of Reach and Relevance in Current Forms of Digital Advertising

Evidence shows that online advertising significantly raises advertisers' revenues and using data generating tools for online ad campaigns further increases returns.[51] Studies have found that personalized marketing can reduce consumer acquisition costs by up to 50%.[52] Personalized ads cost three times more than non-personalized ones, indicating their superior value to advertisers.[53] Experts assess that more than 70% of consumers increasingly value personalized offers and services and have come to expect it from suppliers.[54] AI and data powered hyper-personalization services have become a EUR 25 billion industry as users demand increasingly tailored experiences.[55]

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49 Gregor Langus and Vilen Lipatov, "Value Creation by Ad-Funded Platforms," SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, 2022), https://doi.org/10.2139/ssrn.4014923.

50 Press Release, 22 April, 2025, accessed May 29, 2025, https://ec.europa.eu/commission/presscorner/detail/en/ip_25_1085.

51 Steven Tadelis et al., "Learning, Sophistication, and the Returns to Advertising: Implications for Differences in Firm Performance," Working Paper, Working Paper Series (National Bureau of Economic Research, April 2023), https://doi.org/10.3386/w31201.

52 "What Is Personalization? | McKinsey," accessed April 6, 2025, https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-personalization.

53 "The Economic Value of Behavioral Targeting in Digital Advertising", HIS Markitm, accessed May 29, 2025, https://datadrivenadvertising.eu/wp-content/uploads/2017/09/BehaviouralTargeting_FINAL.pdf.

54 "The Value of Getting Personalization Right—or Wrong—Is Multiplying | McKinsey," accessed April 6, 2025, https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/the-value-of-getting-personalization-right-or-wrong-is-multiplying.

55 Research and Markets ltd, "Hyper Personalization Market Report 2025 - Research and Markets," accessed April 20, 2025, https://www.researchandmarkets.com/reports/6035625/hyper-personalization-market-report.

Preventing seamless data integration across services (e.g., between Facebook and Instagram or between Google Search and YouTube), lowers the effectiveness of personalized and targeted advertising due to the loss of information signals. This leads to lower returns on ad spend (ROAS) and increased customer acquisition costs for advertising businesses relying on the data insights of the designated platforms' advertising services. It also leads to a decrease in revenue for those businesses monetizing their own website through advertisement as personalized ad generate better returns.[56]

Conversely, users opting out from data sharing for advertisement purposes reduces ad effectiveness and diminish advertiser revenues.

A simple switch from personalized marketing to generic marketing reduces clickthrough rates: a field experiment on a social media platform finds that clickthrough rates of personalized advertising double that of simply targeted advertising (about 25% compared to 12%), which in itself can increase clickthrough rates from below 5%.[57] Experts estimate it is up to three times more expensive to acquire a customer without personalized ads.[58]

Evidence from GDPR compliance showed that the introduction of a consent-based approach is associated with statistically significant declines in click-through rates, bid prices, and conversion rates, with an estimated decrease in revenue-per-click of 5.7% for web publishers.[59] Recent research found a 2% reduction of online sales revenues after GDPR implementation and a 8% reduction of profits due to compliance costs.[60]

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[56] "Digital-Advertising-Balancing-Regulation-and-Growth-Opportunities-for-American-Businesse" , Advertiser Perceptions Q2 2024,, accessed May 29, 2025, https://www.advertiserperceptions.com/wp-content/uploads/2024/06/Digital-Advertising-Balancing-Regulation-and-Growth-Opportunities-for-American-Businesses_June-2024-Final.pdf.

[57] Catherine E. Tucker, "Social Networks, Personalized Advertising, and Privacy Controls," *Journal of Marketing Research* 51, no. 5 (October 2014): 546–62, https://doi.org/10.1509/jmr.10.0355.

[58] Benjamin Mueller and Daniel Castro, "The Value of Personalized Advertising in Europe," Center for Data Innovation, November 2024.

[59] Pengyuan Wang, Li Jiang, and Jian Yang, "The Early Impact of GDPR Compliance on Display Advertising: The Case of an Ad Publisher," *Journal of Marketing Research* 61, no. 1 (February 1, 2024): 70–91, https://doi.org/10.1177/00222437231171848.

[60] Chinchih, Chen, Carl Benedikt Frey, and Giorgio Presidente. *Privacy Regulation and Firm Performance: Estimating the GDPR Effect Globally*. No. 1. Oxford Martin School Working Paper, 2022. https://oms-www.files.svdcdn.com/production/downloads/Privacy-Regulation-and-Firm-Performance-Giorgio-WP-Upload-2022-1.pdf

Marketing experts predict that smaller firms will suffer from higher customer acquisition costs due to their lower ability to efficiently target their audience after the DMA:[61]

*"The DMA will continue to limit data and drive costs further up, since large brands will continue to spend even without precise targeting. In fact, the DMA could inadvertently increase customer acquisition costs for smaller brands, decreasing their current economic footprint." - Ad exchanger*

Small advertisers faced a 15% drop in ad efficiency after GDPR restrictions.[62]

Achieving the benefits from personalization will be harder for firms without the benefit of the platforms' role as data aggregator.

### 2. More Reliance on Intermediaries for Valuable Insights

It is difficult to obtain consent for the use of third-party data with the standards of consent required by GDPR, and the solutions are costly. A field experiment following the implementation of GDPR reports that user consent to data collection and use by third parties is less than 5% (other consent categories, such as the first party collection and use, were several magnitudes higher).[63] Other authors estimate rates of non-consent to data usage to be between 4.1% and 15.4% of site visits[64]

Following the GDPR, some websites have shifted towards internal data collection, which is likely less efficient than third party data tracking.[65] Some advertisers or publishers are investing in first-party user data to offset the loss of third-party

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[61] AdExchanger Guest Columnist, "What The Digital Markets Act Means To US Brands and Consumers," AdExchanger, July 19, 2022, https://www.adexchanger.com/data-driven-thinking/what-the-digital-markets-act-means-to-us-brands-and-consumers/. "The DMA will continue to limit data and drive costs further up, since large brands will continue to spend even without precise targeting. In fact, the DMA could inadvertently increase customer acquisition costs for smaller brands, decreasing their current economic footprint."

[62] Pengyuan Wang, Li Jiang, and Jian Yang, "The Early Impact of GDPR Compliance on Display Advertising: The Case of an Ad Publisher," *Journal of Marketing Research* 61, no. 1 (February 1, 2024): 70–91, https://doi.org/10.1177/00222437231171848

[63] Miguel Godinho de Matos, Idris Ajerid, "Consumer Consent and Firm Targeting After GDPR: The Case of a Large Telecom Provider," *Management Science* 68(5) (2021):3330-3378.

[64] Samuel G. Goldberg, Garrett A. Johnson, and Scott K. Shriver, "Regulating Privacy Online: An Economic Evaluation of the GDPR," *American Economic Journal: Economic Policy* 16, no. 1 (February 2024): 325–58, https://doi.org/10.1257/pol.20210309.

[65] Christian Peukert et al., "Regulatory Spillovers and Data Governance: Evidence from the GDPR," *Marketing Science* 41, no. 4 (July 2022): 746–68, https://doi.org/10.1287/mksc.2021.1339; The authors find a decrease in third-party cookies (-12.8%) and an increase in first-party cookies (1.7%) after the GDPR, suggesting a shift in data collection practices.

signals.[66] However, many businesses lack the resources to build and manage extensive first party databases. These firms rely heavily on the digital platform service ability to aggregate user data to optimize ad targeting.[67] The resulting efficiencies from data network effects are harder to match when data are fragmented across different websites and providers.[68]

To maintain reach, firms are turning to more complex strategies—often involving increased reliance on marketing intermediaries—pushing up costs. Businesses were more likely to outsource to the largest providers following the enactment of the GDPR.[69]

Other large intermediaries that have access to 'walled gardens' of data are also becoming attractive. Advertisers may also diversify towards new providers with opportunities for good contextual and behavioural targeting. Media retail advertising services (advertising services of large retailers' online marketplaces) that also benefit from extensive first party data may gain some traction.[70] The multiplication of channels needed to achieve the same reach as the largest advertising services increases the cost of online marketing campaigns.

### 3. New Costs of Compliance for Businesses

Collecting first party data also comes with the high costs of complying with GDPR obligations as well as cybersecurity risks.[71] A 2019 survey found that over half of small businesses in the EU reported spending between €1,000 and €50,000 on GDPR

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[66] AdExchanger Guest Columnist, "What The Digital Markets Act Means To US Brands and Consumers," AdExchanger, July 19, 2022, https://www

[67] Cristina Alaimo and Jannis and Kallinikos, "Computing the Everyday: Social Media as Data Platforms," *The Information Society* 33, no. 4 (August 8, 2017);

[68] Giovanna Culot et al., "The Data Sharing Conundrum: Revisiting Established Theory in the Age of Digital Transformation," *Supply Chain Management: An International Journal* 29, no. 7 (April 29, 2024): 1–27, https://doi.org/10.1108/SCM-07-2023-0362.

[69] Peukert et al. (2022). Given the legal uncertainty and loss in efficiency of alternative tools, SMEs relied more intensively on the largest players, with the market for web tracking technologies becoming more concentrated.

[70] AdExchanger, "The DMA Is Off To The Races; Brands Are Feeling The First-Party Squeeze," AdExchanger, March 11, 2024, https://www.adexchanger.com/daily-news-roundup/monday-11032024/. "Many programmatic companies have pivoted to retail media since 2020."

[71] Maria Da Conceição Freitas and Miguel Mira Da Silva, "GDPR Compliance in SMEs: There Is Much to Be Done," *Journal of Information Systems Engineering & Management* 3, no. 4 (November 10, 2018), https://doi.org/10.20897/jisem/3941.

compliance, with their regulatory compliance costs increasing by 20-30% from GDPR.[72]

Businesses must ensure they have user consent before they transmit usage data to advertising services in scope of the, increasing costs for smaller advertisers.

Several advertising platform services have provided tools to comply with the consent related obligations emanating from the DMA but the process remains complex for firms: it requires additional infrastructure for tracking users who opt out, leading to increased engineering and legal costs.[73] The fixed compliance costs disproportionately affect SMEs  with lower volume of transactions across which to spread the fixed cost fewer capabilities to design and manage this type of infrastructure.[74]

## 4. Impact of Advertisement Data Transparency

Article 5(9)-5(10) of the DMA mandates that designated "gatekeepers" provide advertisers and publishers with comprehensive daily reports containing granular details on the financial transactions within the ad ecosystem. While the regulation aims to enhance transparency and promote fair competition, it also introduces significant uncertainty as to the effect on market efficiency, operational costs, and advertising performance for businesses.

The online advertising ecosystem has been challenged on the ground of lack of transparency in the prices and the alleged market power of the advertising service providers.[75] The introduction of Articles 5(9) and 5(10) of the DMA is aims to increase fairness and competition in advertising services by increasing transparency in ad transactions. This remedy is intended to remove the possible conflict of interest that integrated digital platform service providers may have and ensure that ad placements better serve advertisers' and publishers' interests.

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[72] "Millions of Small Businesses Aren't GDPR Compliant, Our Survey Finds," GDPR.eu, May 20, 2019, https://gdpr.eu/2019-small-business-survey/.

[73] "Consent for Google Ads Personalization," TermsFeed, February 16, 2025, https://www.termsfeed.com/blog/consent-google-ads-personalization/.

[74] Michal S Gal and Oshrit Aviv, "The Competitive Effects of the GDPR," *Journal of Competition Law & Economics* 16, no. 3 (September 9, 2020): 349–91, https://doi.org/10.1093/joclec/nhaa012.

[75] "Online Platforms and Digital Advertising Market Study," GOV.UK, July 1, 2020, https://www.gov.uk/cma-cases/online-platforms-and-digital-advertising-market-study."L'Autorité rend son avis sur la publicité en ligne," Autorité de la concurrence, March 6, 2018, https://www.autoritedelaconcurrence.fr/fr/communiques-de-presse/lautorite-rend-son-avis-sur-la-publicite-en-ligne.

The digital advertising ecosystem heavily relies on real-time bidding (RTB), an automated process where advertisers compete in milliseconds to display ads to users. It has been shown that in auctions for programmatic advertising (advertisement placed through real time data based optimization) publishers tend to set their minimum prices too high compared to the social optimum, partly to compensate for the bid "shading" (lowering) of both exchanges and advertisers that occurs in first price auctions.[76] Ad exchanges tend to lower the bid announced by the advertiser to maximize the likelihood that the ad is published and so receive remuneration. Advertisers tend to bid lower than their value not to overpay over the market price. Price transparency rules may in principle reduce these inefficiencies by revealing the bid information and remunerations along the value chain, although the practical impact will depend on advertisers' ability to process and act on the data released.[77] Some have expressed concerns over possible collusive strategies.[78]

Due to growing data restrictions and the intermediation costs of the ad exchange value chain, advertisers are increasingly allocating programmatic advertising expenditure away from open auctions towards guaranteed deals or preferred deals, typically with inventory suppliers with access to valuable data. [79] Direct or preferred deals with merchant sites, connected TVs, or large publishers. Non-programmatic direct sales of advertising inventory represent 50% of publishers inventory sales.[80]

## B. Online Search Services

There have been persistent complaints that Google's online search engine - the only such service designated by the DMA- uses the design and features of its search

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[76] Robert Zeithammer and W. Jason Choi, "Auctions of Auctions," *Management Science*, December 13, 2024, https://doi.org/10.1287/mnsc.2024.05233.

[77] "DMA Transparency Requirements in Relation to Advertising", CERRE, Issue Paper November 2022, accessed May 5, 2025, https://cerre.eu/wp-content/uploads/2022/11/DMA_TransparencyRequirementsinAdvertising.pdf.

[78] "DMA Transparency Requirements in Relation to Advertising", CERRE, (2022)

[79] "Direct Deals vs. Programmatic: How SSPs Are Changing the Direct Ad Sales Game | LinkedIn," accessed May 5, 2025, https://www.linkedin.com/pulse/direct-deals-vs-programmatic-how-ssps-changing-ad-sales-game-blasto-et7wf/.

[80] "Programmatic vs Direct Ads: What Makes More Money? | LinkedIn," accessed May 5, 2025, https://www.linkedin.com/pulse/programmatic-vs-direct-ads-what-makes-more-money-monetizemore-i8nsf/; "IAB Europe's Attitudes to Programmatic Advertising Report" IAB, November 2024, accessed May 5, 2025, https://iabeurope.eu/wp-content/uploads/IAB-Europe-Attitudes-to-Programmatic-Advertising-Report-Nov-2024.pdf.

result page to favour its own complementary services. In response, the DMA requires that search results be provided under non-discriminatory terms and not favour the platform's other proprietary services such as location services (Google Maps), specialized search results, or advertisements. Additional DMA provisions restrict the combination of data across services and provide access to businesses to the data generated by their users.

### 1. Loss of Reach, Relevance, and Less Effective Discovery

To address concerns about access for competing specialized services, Article 6(5) of the Digital Markets Act (DMA)—and potentially Article 6(12)—requires "gatekeepers" to grant greater visibility to competing third party services in online search results.

To comply, Google Search result page now features a dedicated space for alternative specialized search providers ("comparison sites" or "third party aggregators") and a dedicated advertisement space for these competitors.[81]

On the other hand, the space dedicated to direct placement of businesses has become less central. For example, Free Business Listings ("FBL"), a space where businesses can be featured for free, is now less visible on the research page. Businesses looking for direct visibility need to buy advertisement, either with Google or with other aggregators.[82] Hotels, for example, can bid for Google Ads or the more effective Google Hotel Ads placement, a targeted advertisement service that allows them to use features that enhance conversion such as direct booking by the customer.

With the downgrading of FBL visibility, businesses lose a costless but efficient opportunity of being discovered. For example, the hotel FBL particularly targeted mobile users more likely to be travellers on the road looking for a last-minute booking.[83] Smaller hotels were more likely to be featured for this typically lower

[81] "An Update on Our Compliance with the DMA," Google, November 26, 2024, https://blog.google/around-the-globe/google-europe/dma-compliance-update/.

[82] Julia Luczak-Rougeaux, "Pourquoi le DMA dessert-il les hôteliers indépendants ?," TOM.travel, February 29, 2024, https://www.tom.travel/2024/02/29/pourquoi-le-dma-dessert-il-les-hoteliers-independants/.

[83] "Google's Free Booking Links: The Secret Weapon for Hotels in the Battle for Direct Bookings," Hospitality Net, February 26, 2025, https://www.hospitalitynet.org/news/4114799.html.

budget demand. According to industry experts, these free listings could generate a 12% increase in reservations.[84]

After the DMA, search visibility is increasingly routed through intermediaries at the expense of direct business listings and even dedicated ads. The click through rate of Google Hotel Ads decreased by 30% in regions affected by the DMA compared to unaffected regions during January – April 2024.[85] Direct bookings through Google Hotel Ads decreased by 36%.[86]

### 2. Decentralization and Increase in Costly Intermediation

Listing through intermediary aggregators cost more than direct advertisement and increase the cost of discovery.[87] Businesses now face two separate challenges: (1) paying intermediaries for visibility; and (2) managing their presence across multiple platforms, each with different rules and costs — far more demanding than optimizing for a single search engine.[88]

With several services, the benefits of centralization and coordination are diminished. Even though multihoming is not uncommon, most businesses in the EU use only one marketplace.[89] The forced push towards decentralization raises the cost and complexity of reaching a broad consumer base.

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[84] Luczak-Rougeaux, "Pourquoi le DMA dessert-il les hôteliers indépendants ?"

85 "DMA Implementation Sinks 30% of Clicks and Bookings on Google Hotel Ads," accessed April 2, 2025, https://www.mirai.com/blog/dma-implementation-sinks-30-of-clicks-and-bookings-on-google-hotel-ads/.

86 "DMA Implementation Sinks 30% of Clicks and Bookings on Google Hotel Ads," Mirai, 7 May 2024. accessed April 2, 2025, https://www.mirai.com/blog/dma-implementation-sinks-30-of-clicks-and-bookings-on-google-hotel-ads/.

87 "Google's Free Booking Links: The Secret Weapon for Hotels in the Battle for Direct Bookings," Hospitality Net, February 26, 2025, https://www.hospitalitynet.org/news/4114799.html." For Google Ads, the average distribution cost in 2022 was 7%, a decrease from 8% in 2019. On both platforms, pay-per-click fees are considerably lower than OTA commissions, which generally start at 15% on Booking.com and 18% on Expedia plus incremental commissions for promotions."

88 "Les conséquences de l'application du DMA par Google - GHR," accessed April 7, 2025, https://www.ghr.fr/europe-numerique/plateformes-en-ligne/les-consequences-de-l-application-du-dma-par-google.

[89] Eurostat, "Ventes Électroniques, Par Activité de La NACE Rév. 2" (Eurostat, 2025), https://doi.org/10.2908/ISOC_EC_ESELN2. Data for 2020. Variables [E_AWSCMP_2] [E_AWSCMP_GT2] [E_AWSCMP_1] on number of marketplaces used by businesses in the EU.

### 3. Inefficient Disintegration

Online search services use integrations that reduce transaction costs for businesses and users. For instance, searching for a restaurant on Google previously brought up a central, clickable map displaying top results. Users could easily explore locations, check distances, get directions, and even book a table. Similarly, hotel searches triggered a Google Hotels module for comparing prices and availability across dates and locations. These features let consumers efficiently gather and act on information—whether navigating to a restaurant or booking a flight—by removing extra steps between decision and action.

The DMA's prohibition of self-preferencing in ranking of first party services may lead to the removal of clickable Google Maps from Google Search. The map is still shown but may no longer be clickable, which increases transaction costs for users, who must now take additional steps to access basic information. As one Reddit user remarked: *"I search for a place... and can't see where it is".* [90] Empirical research showed that the delinking of Google Maps on the desktop version of Google Search noticeably increased search effort for users without significantly altering the overall usage of the service or increasing volume for competing services.[91]

The location based complementary features in Google Maps, such as opening hours, availability, or price, are valuable to businesses and increase the likelihood of concluding a transaction.[92]

### 4. Loss of Trust and Loss of Quality

Building trust is critical for businesses, particularly new entrants lacking established reputations. Digital platforms help by hosting user reviews and acting as secure intermediaries—managing bookings and payments, reducing fraud risk, and effectively guaranteeing service quality.

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[90] Deathstroyer9000, "Why Doesn't Maps Show up under Google Searches Anymore?," Reddit Post, *R/GoogleMaps*, January 19, 2024, https://www.reddit.com/r/GoogleMaps/comments/19ahfx2/why_doesnt_maps_show_up_under_google_searches/.

[91] Louis-Daniel Pape and Michelangelo Rossi, "Is Competition Only One Click Away? The Digital Markets Act Impact on Google Maps," SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, 2024, https://doi.org/10.2139/ssrn.4922400.

[92] "Boost Your Sales with Google Map Listings," *Kia Ora Digital* (blog), accessed May 13, 2025, https://www.kiaoradigital.com.au/learn/google-map-listings-can-increase-sales/.

Trust-building mechanisms—such as unified ratings and verified identities—are essential for platform performance. A one-star increase on Yelp raises restaurant revenues by 5–9% and eBay studies show that verified seller systems outperform decentralized ratings.[93] These systems often rely on shared identity, cross-platform data, and centralized enforcement—features that risk being undermined by disintegration measures under the DMA.

With reviews now fragmented across multiple platforms, owners must encourage customers to post feedback on several sites—Google, Booking, TripAdvisor, etc.—rather than relying on one trusted hub. Hotel and restaurant associations have also raised concerns about the increased workload and reduced visibility this creates.[94]

In short, while the DMA seeks to foster competition and limit "gatekeeper" dominance, it may hinder the efficient deployment of features on the largest platforms that increase the quality, usability, and trust that both consumers and businesses rely on.

## C. Social Networking Services

Social networking services enable users to connect with people and entities they know or feel an affinity toward. These interconnections—formed directly or inferred through user engagement with content—can be mapped into *graphs*, which represent the patterns of relationships among users and between users and content.[95] Ongoing research is focused on developing more efficient graph-building techniques tailored to specific predictive purposes such as recommendations, ad targeting, and influencer identification.[96] While AI and

[93] Michael Luca, "Reviews, Reputation, and Revenue: The Case of Yelp.Com," SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, March 15, 2016), https://doi.org/10.2139/ssrn.1928601. Chris Nosko and Steven Tadelis, "The Limits of Reputation in Platform Markets: An Empirical Analysis and Field Experiment," Working Paper, Working Paper Series (National Bureau of Economic Research, January 2015), https://doi.org/10.3386/w20830.

[94] "Les avis en ligne après le 7 mars 2024 ! - GHR," accessed April 7, 2025, https://www.ghr.fr/europe-numerique/plateformes-en-ligne/avis-en-ligne/les-avis-en-ligne-apres-le-7-mars-2024.

[95] Feng Xia et al., "Graph Learning: A Survey," *IEEE Transactions on Artificial Intelligence* 2, no. 02 (April 1, 2021): 109–27, https://doi.org/10.1109/TAI.2021.3076021.

[96] Xiao Li et al., "A Survey of Graph Neural Network Based Recommendation in Social Networks," *Neurocomputing* 549 (September 7, 2023): 126441, https://doi.org/10.1016/j.neucom.2023.126441. Sanjay Kumar et al., "Influence Maximization in Social Networks Using Graph Embedding and Graph Neural Network," *Information Sciences* 607 (August 1, 2022): 1617–36, https://doi.org/10.1016/j.ins.2022.06.075.

machine learning have advanced these methods, data remains fundamental to constructing social media graphs and delivering personalized networking services.

Social networking platforms also use ranking and scoring models for content personalization. A dimension of quality for social media platforms rests on their capability to build such rankings for fast and accurate targeting.[97] Higher quality encourages users to continue using the platform services and increase their engagement, hence providing more data as input to the predictive modelling.[98]

### 1. Loss of Reach from Lower Reliance on Social Graph

Social networking services use data on user social interactions to determine content relevance, recommend content or connections, and identify communities.[99] They also provide a range of tools that build on these user insights to allow businesses to discover audiences and reach those end users more likely to engage with their product.[100]

Reducing the ability to use insights from the social networking graph will be detrimental to the effectiveness of those tools that enable businesses to use social features for growth. An experiment evidencing the impact of losing a valuable social networking signal is provided by LinkedIn's suppression of group membership information for targeting audiences. LinkedIn eliminated this feature to comply with EU legislation preventing the use of sensitive personal data.[101] Industry commentators have noted that "a valuable targeting signal is now off the

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[97] Geoffrey G. Parker, Marshall W. Van Alstyne, and Sangeet Paul Choudary, *Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You* (W. W. Norton & Company, 2016).

[98] Ioanna Constantiou, "Digital Competition and User Engagement: How Do the User Engagement Strategies of Social Media Platforms Contribute to Value Creation?," in *Research Handbook on Digital Strategy* (Edward Elgar Publishing, 2023), 211–23, https://www.elgaronline.com/edcollchap/book/9781800378902/book-part-9781800378902-18.xml. Cristina Alaimo and Jannis and Kallinikos, "Computing the Everyday: Social Media as Data Platforms," *The Information Society* 33, no. 4 (August 8, 2017): 175–91, https://doi.org/10.1080/01972243.2017.1318327.

[99] "Graph Database for Social Networks: 7 Fundamental Use Cases of NebulaGraph| EP 1," accessed April 21, 2025, https://www.nebula-graph.io/posts/social-networks-with-graph-database-1.

[100] TikTok: Anastasiia Kyriienko, "The Best 13 TikTok Shop Analytics Tools," January 9, 2025, https://blog.m2ecloud.com/the-best-13-tiktok-shop-analytics-tools/. LinkedIn:"9 LinkedIn Marketing Tools for Your Business in 2025 | Sprout Social," accessed April 21, 2025, https://sproutsocial.com/insights/linkedin-marketing-tools/.Facebook and Instagram: "Discover Small Businesses Solutions to Grow Online | Meta for Business," accessed April 21, 2025, https://www.facebook.com/business/small-business.

[101] Foo Yun Chee and Foo Yun Chee, "LinkedIn Disables Tool for Targeted Ads to Comply with EU Tech Rules," *Reuters*, June 7, 2024, sec. Technology, https://www.reuters.com/technology/linkedin-disables-tool-targeted-ads-comply-with-eu-tech-rules-2024-06-07/.

table for European campaigns. This could limit the precision and reach potential for certain ad campaigns".[102] A test showed that the click-through-rate (CTR) of campaigns that were targeting with LinkedIn Groups was 0.72% compared to 0.36% in other campaigns promoting the same content. [103]

### 2. Loss of Valuable Graph Integrations

The development of social media technologies, such as social buttons, social plugins, or graph-based recommendations, has enabled new services and features that build on these social connections.[104] Research has linked the collection of new forms of "social" data to the inclusion of new types of participants to digital services platforms. For example, TripAdvisor progressively increased its types of users and collected new forms of "social" data to evolve from a specialized search service into a digital ecosystem that engages multiple types of businesses.[105]

Provisions that impose separation of services within digital services platforms may have a steep innovation cost as they halt the natural evolution of the platform through the reconfiguration of their participants and data. For example, Facebook enhanced the organic "Buy and Sell" groups on its platform, structuring new forms of data (such as listings) in ways that enhanced the service. This led to the development of Facebook Marketplace, a much more effective solution for users wanting to engage in commerce, which attracted new types of users to the platform. By considering these new forms of interactions as new 'services' that must be siloed, the DMA halts a natural path of innovation for digital services platforms. For example, due to the restrictions on the use of Facebook social graph, Meta has scrapped Facebook Dating and has eliminated the possibility of multi-player gaming in the EU.[106]

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[102] Anu Adegbola, "LinkedIn Drops User Targeting Based on Groups Data," Search Engine Land, June 11, 2024, https://searchengineland.com/linkedin-groups-user-targeting-443094.

[103] "LinkedIn Groups Targeting: The Secret Sauce," Metric Theory, September 11, 2020, https://metrictheory.com/blog/linkedin-groups-targeting-the-secret-sauce/.

[104] Cristina Alaimo, Ioannis Kallinikos, and Aleksi Aaltonen, "Data and Value" (GB, 2020), https://iris.luiss.it/handle/11385/193482.

[105] Cristina Alaimo, Jannis Kallinikos, and Erika Valderrama, "Platforms as Service Ecosystems: Lessons from Social Media," *Journal of Information Technology* 35, no. 1 (March 1, 2020): 25–48, https://doi.org/10.1177/0268396219881462.

[106] Meta Compliance with the Digital Market Act, Non-Confidential Public Summary of Meta's Compliance Report, 2025.

### 3. Less Trustworthy and Lower Quality Ecosystem

As is the case of other digital platform services, data play a useful role in supporting the safety and integrity of the online experience. Graph Anomaly Detection is a research field that explores ways to detect unusual connection patterns or unusual behaviour within a graph.[107] These techniques require strong privacy protection and guarantees; but when properly deployed, they can help reinforce the safety and security of online digital services. The inability to use insights across services may weaken these security tools. This is an even bigger concern with the proliferation of third-party actors' digital services platforms and the weakened ability by the platform owner to control access.

## D. Intermediation Services

Online marketplaces provide businesses with an accessible platform to list and sell their products without the high costs of developing and maintaining their own website. These marketplaces attract large customer bases, offer curated placement opportunities, built-in payment processing, and can provide logistical support like shipping and fulfilment services, all of which reduces operational burdens and enhances business organizational efficiency. Additionally, they offer marketing tools, customer insights, and trust-building mechanisms.

The main goal of online intermediation services is to connect a multitude of prospective buyers with their best match from a large set of potential sellers. The benefits of such a business model to the entire ecosystem of participants are obvious. However, with the loss of data exchange, an overbroad interpretation of the self-preferencing provision, and reduced possibilities for personalization, intermediation services will see a reduction in some of the value-creating possibilities they offer.

[107] Tahereh Pourhabibi et al., "Fraud Detection: A Systematic Literature Review of Graph-Based Anomaly Detection Approaches," *Decision Support Systems* 133 (June 1, 2020): 113303, https://doi.org/10.1016/j.dss.2020.113303.

### 1. Lower Reach and Loss of Relevance

Intermediation services platforms leverage data from multiple sources to increase personalization and matching and inform marketing campaigns.[108] Research has shown that personalization of the e-commerce experience increases merchant's sales. A field experiment with 555,800 customers on the Alibaba platform in China showed that restricting the use of personal data for recommendations led to more concentration in recommendations and a very sharp decrease in the matching quality as measured by both clickthrough rate (75% drop), product viewing (33% drop), and market transactions (81% drop in purchases of home page recommendations).[109]Although consumers' active search queries increased, there was a net loss in total commerce. The negative effect was more pronounced for niche merchants.

### 2. Loss of Valuable Integrations

The DMA provisions may decrease the incentives by the intermediation platforms' owners to promote joint investments in quality and valuable complementary services as they derive less benefits from it.

It is normally in the interest of most digital services platform participants to ensure the long-term dynamism of the platform ecosystem. Some merchants co-invest in the platform in the sense that they make platform specific adjustments to their business. For example, Booking.com has a dedicated partner website with suggestions of measures to avoid cyberfraud or ways optimize for success on the search engine.[110] In addition, Booking.com's "Preferred Plus" program can promote those properties in the preferred partner program that generate high levels of demand and receive consistent high customer ratings.[111] The program also comes with a higher commission for the platform. These and many comparable

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[108] "7 Ways Big Data Will Change E-Commerce Business | Talend," accessed May 6, 2025, https://www.talend.com/resources/big-data-ecommerce/.

[109] Tianshu Sun et al., "The Value of Personal Data in Internet Commerce: A High-Stakes Field Experiment on Data Regulation Policy," *Manage. Sci.* 70, no. 4 (April 1, 2024): 2645–60, https://doi.org/10.1287/mnsc.2023.4828.

[110] "Help for Partners, Hosts, and Owners," Booking.com for Partners, February 22, 2019, https://partner.booking.com/en-us/help.

[111] "Get Help Standing out from the Competition and Grow Your Bookings | Booking.Com for Partners," accessed May 8, 2025, https://partner.booking.com/en-us/help/growing-your-business/increase-revenue/all-you-need-know-about-preferred-plus.

arrangements between platform provider and a select group of complementors will be reduced by the mandate to treat all sellers equally, which will lower the incentives for co-investment programs both for the platform provider and complementors.

For price parity clauses (that make it impossible for accommodation providers to charge lower prices anywhere else than the focal platform), the aim to introduce competition on fees to the seller has to be balanced against the compensation for the services and investments the platform itself undertakes.[112] Some researchers have proposed to allow for "narrow" price-parity clauses that only restricts businesses' direct sales to prices higher or equal to the one offered on the focal platform, thus avoiding businesses using the platform as mere "showrooming", and ensuring compensation for the platform's investment into facilitating high quality transactions.[113] Overall, evidence on the impact of price parity clauses appears ambiguous and characterized with heterogenous effects for hotels and customers.[114]

### 3. Loss of Trust and Quality

Marketplaces are curated by the platform owner to deliver a value proposition that comes to be expected by its customers.[115] A lower ability to align merchants will prevent it from preserving the user experience, sustaining its quality, and will likely reduce platform service's demand and revenues.

Platform services' direct sales by the platform owner, added visibility in return of valuable investments, or pricing structures and restrictions, are all possible tools for platform governance and value alignment. Direct entry can be a way to direct third parties' efforts into less commoditized products and it can also be a way to phase out counterfeiters and fraudulent business likely to appear in some

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[112] Andrea Mantovani, Claudio A. Piga, and Carlo Reggiani, "Online Platform Price Parity Clauses: Evidence from the EU Booking.Com Case," *European Economic Review* 131, no. C (2021), https://doi.org/10.1016/j.euroecorev.2020.103625.

[113] Ariel Ezrachi, "The Competitive Effects of Parity Clauses on Online Commerce," *European Competition Journal* 11 (2015): 488.

[114] Mantovani, Piga, and Reggiani, "Online Platform Price Parity Clauses"; Chengsi Wang and Julian Wright, "Search Platforms: Showrooming and Price Parity Clauses," *The RAND Journal of Economics* 51, no. 1 (2020): 32–58, https://doi.org/10.1111/1756-2171.12305.

[115] "Value Drivers of e-Commerce Business Models - Creating Value: Winners in the New Business Environment - Wiley Online Library," accessed May 6, 2025, https://onlinelibrary.wiley.com/doi/abs/10.1002/9781405164092.ch2. Hagiu and Wright (2018) explain the tension between control and delegation in such settings. Andrei Hagiu and Julian Wright, "Platform Minimum Requirements," Technical Report, Working Paper, 2018.

segments. [116] Evidence shows that direct sales by the e-commerce platform can increase product demand benefiting both consumers and businesses.[117] Direct entry may align with a strategy aimed at making the marketplace more appealing to consumers than with third-party seller expropriation.[118]

The increased control of complementors and users over their own data granted by the DMA aims to reduce the information asymmetry between platform owner and other platform participants. But this measure also increases the potential for marketplace leakage, where businesses take customers off the platform.[119]

The ability to disintermediate the platform service may create a fundamental divergence between the long-term goals of the platform and complementors: while platforms have an incentive to invest in long-term quality of interactions on the platform, complementors have an incentive to lure participants off the platform, leading to misaligned investment incentives. A predictable reduction in the functionalities provided by the digital intermediation service may reduce the quality of transactions it facilitates.[120] For example, research shows that platform-coordinated trust systems outperform decentralized ones.[121]

In sum, while intermediation services have been among the most powerful platforms, they also deliver one of the most convincing value propositions of the platform business model. Regulations that make selective preferencing or integration of some complementary services more difficult or restrict the use of data to improve search results and subsequent matching, run the risk of limiting some of the key reasons for implementing a platform business model in the first place.

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[116] Feng Zhu, "Friends or Foes? Examining Platform Owners' Entry into Complementors' Spaces," *Journal of Economics & Management Strategy* 28, no. 1 (2019): 23–28, https://doi.org/10.1111/jems.12303.

[117] Feng Zhu and Qihong Liu (2018). Competing with Complementors: An Empirical Look at Amazon.com. Strategic Management Journal Volume 39, Issue 10, 2618-2642.

[118] Crawford, S. G., Courthoud, M., Siebel, R. & Zuzek, S. (2022). Amazon Entry on Amazon Marketplace. Discussion Paper. https://www.zora.uzh.ch/id/eprint/229851/1/crawford_etal_CEPR_DP17531_1_.pdf.

[119] Andrei Hagiu and Julian Wright, "Marketplace Leakage," *Management Science* 70, no. 3 (March 2024): 1529–53, https://doi.org/10.1287/mnsc.2023.4757.

[120] "Platform-driven Innovation: Unveiling Research and Business Opportunities - Trabucchi - 2021 - Creativity and Innovation Management - Wiley Online Library," accessed May 9, 2025, https://onlinelibrary.wiley.com/doi/abs/10.1111/caim.12428.

[121] Chris Nosko and Steven Tadelis, "The Limits of Reputation in Platform Markets: An Empirical Analysis and Field Experiment," Working Paper, Working Paper Series (National Bureau of Economic Research, January 2015), https://doi.org/10.3386/w20830.

# V. Impact of the DMA on EU Businesses and the Economy

Digital services platforms have emerged as powerful enablers for businesses that would otherwise lack the means to benefit from the benefits of digitalization.[122] It is well documented that firms that engage in digitalization and use platform digital services are on average more productive than their counterparts.[123]

The digital services platforms targeted by the DMA continue to be the most widely used by European companies. However, a decrease in the efficiency of these platforms from the DMA provisions hurts the ability of businesses to kickstart and sustain their growth with these digital platform services. This efficiency loss impacts all business users, but more so the smaller ones that are less able to invest in compensating strategies.

Using 2023 revenues as a baseline for calculations, we estimate the scale of the potential annual revenue loss for firms across the service sector (excluding the financial, health, and utilities sector) to be between EUR 8.5 billion if we consider just the bare use of personalized advertising and EUR 114 billion if we account for the use of additional digital platform services enhancing reach and sales. This corresponds to a loss between 0.05% and 0.64% of the total turnover of the sectors considered. This is a significant economic impact for some sectors and firms and represents an average loss of revenue per worker across these sectors up to EUR 1,122 per year, with significantly higher number for some sectors.

In practice, the effect is very uneven across sectors as some are bound to be more reliant on online presence and sales. This section describes in more detail the estimation of the economic impact of the DMA provisions on EU businesses and the EU economy.

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[122] *See, for example*, Aronica, Martina, Rubinia Celeste Bonfanti, and Davide Piacentino. "Social media adoption in Italian firms. Opportunities and challenges for lagging regions." *Papers in Regional Science* 100, no. 4 (2021): 959-979.

[123] *See, for example,* Garicano, Luis, and Juan Santaló. "Can Platform Supported Digitalisation Raise The Productivity Of European Firms." *ie University – Center for the Governance of Change* (2024), *henceforth* Garicano et al. 2024, Table 2.

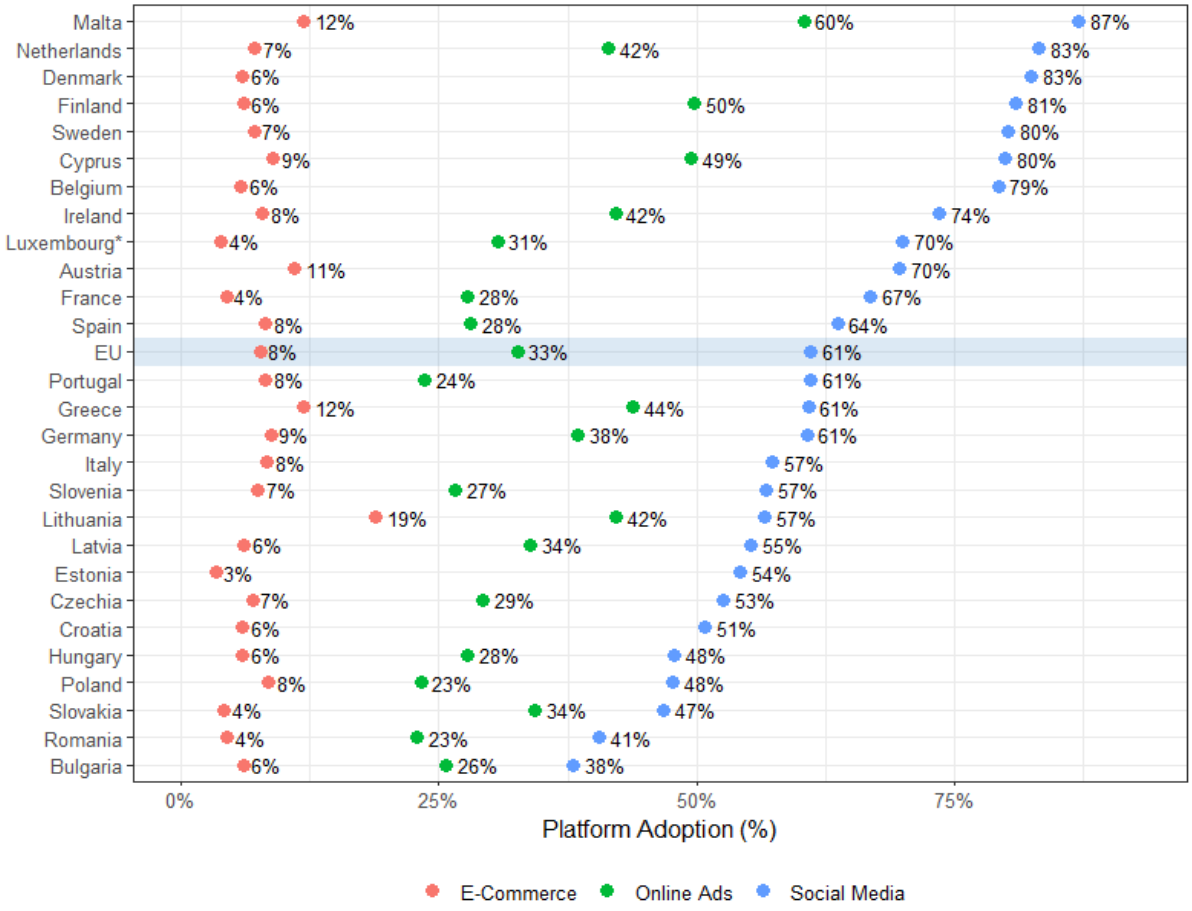
## A. Wide Adoption by European Businesses of Online Platform Services

European businesses have widely adopted digital platform services to enhance their productivity and competitive position, and adoption continues to grow. Usage of these digital services across all firms in the services and infrastructure sectors in the EU increased from 41% in 2021 to 50% in 2024.[124] Large firms' utilization of digital platform technologies in 2024 is higher (58%) than that of small firms (50%). European SMEs are more likely to rely on digital platform services compared to their US counterparts (50% vs. 43%) and European large firms are less likely to do so (58% vs 62%).[125]

[124] *See* European Investment Bank Survey (EIB) Investment Survey (*henceforth* EIBIS) 2021 and 2024.

[125] EIBIS 2024. The data record adoption of digital platforms by firms in the services and infrastructure sectors.

**Figure 1 - Percentage of firms using digital platforms in distinct jurisdictions (2024)**




**Source**: Eurostat – ICT usage in enterprises. Adoption rate for all firms with 10 or more employees. E-commerce and Online Ads values are for 2024, while the latest available data for Social Media is 2023. NACE: All activities (except agriculture, forestry and fishing, and mining and quarrying), without financial sector. Social Media is "Use any social media" [E_SM1_ANY], while Online Ads is "Pay to advertise on the internet" [E_ADS], both available at https://doi.org/10.2908/ISOC_CISMT. E-commerce is "Enterprises where B2C web sales are 10% or more of the total web sales and which sold via e-commerce marketplaces" [E_AWSVAL_B2C_GE10WS_CMP], available at https://doi.org/10.2908/ISOC_EC_ESELS. **Note:** Luxembourg's Online Ads value is for 2023 as its 2024 was not available.

**Online search services.** Eurostat does not produce data on the reliance on onlin search services. But about 78% of all EU businesses of 10 employees or more had a company website in 2023 and so were searchable. Paid search advertisement and organic online search are important discovery tools and revenue generators. A 2019 study found that 68% of all trackable website traffic to U.S. businesses was sourced

from organic and paid search results, vastly exceeding all other channels, including display advertisement and social media.[126]

In 2023, direct online sales through companies' websites were six times higher than sales through marketplaces.[127]

**Online marketplaces**. About 8% of all businesses used online marketplaces to sell to final consumers.[128] Online sales through both marketplaces and websites represented around 7.3 % of total turnover for all sectors combined across the EU in 2024, with online sales to final consumers representing 3.42% of total turnover.[129] There is significant country variation. For example, German businesses are twice as likely to use marketplaces compared to French businesses (Figure 1).

**Online advertising**. The average adoption rate of paid online advertising across countries reporting the data in the EU is about 33% for 2024 (Figure 1). Country level information shows adoption rates ranging between 20% (Poland) and 58% (Malta).[130] More than 40% of Dutch or Finnish businesses pay to advertise online compared to only 21% of French ones. Among companies paying for online advertisement in the EU in 2024, 77% use contextual advertisement, which is based on the content users are engaging with on the website, 42% used behavioural advertisement which is based on a richer profile of the user, and 44% used geo-

[126] "Organic Search Improves Ability to Map to Consumer Intent: Organic Channel Share Expands to 53.3% of Traffic" BrightEdge Research (2019) accessed May 28, 2025, https://videos.brightedge.com/research-report/BrightEdge_ChannelReport2019_FINAL.pdf.

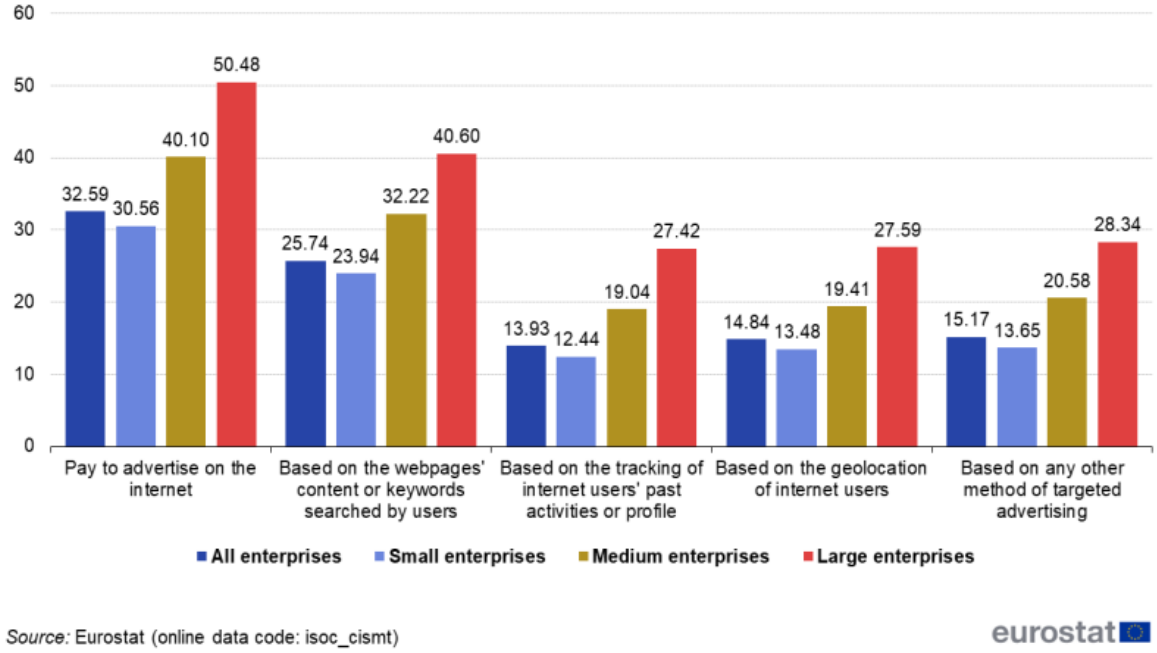
[127] "E-Commerce Statistics," accessed May 28, 2025, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=E-commerce_statistics. "[Isoc_ec_esels] E-Commerce Sales of Enterprises by Size Class of Enterprise," accessed May 28, 2025, https://ec.europa.eu/eurostat/databrowser/view/isoc_ec_esels/default/table?lang=en.;Eurostat, "Sites Web et Leurs Fonctionnalités, Par Activité de La NACE Rév. 2" (Eurostat, 2025), https://doi.org/10.2908/ISOC_CIWEBN2.

[128] The measure used for is fairly conservative, as it only measures the percentage of firms that use online marketplaces to sell to final consumers [E_AWSVAL_B2C_GE10WS_CMP] for 2024, All firms larger than 10 employees, NACE: All activities (except agriculture, forestry and fishing, and mining and quarrying), without financial sector. Available at https://doi.org/10.2908/ISOC_EC_ESELS.

[129] Eurostat, "Value of E-Commerce Sales by Size Class of Enterprise" (Eurostat, 2024), https://doi.org/10.2908/ISOC_EC_EVALS.

[130] "[isoc_cismt] Social Media Use by Type, Internet Advertising and Size Class of Enterprise," accessed May 28, 2025, https://ec.europa.eu/eurostat/databrowser/view/isoc_cismt/default/table?lang=en. Measures share of firms that pay to advertise on the internet [E_ADS], for 2023, All firms larger than 10 employees, NACE: All activities (except agriculture, forestry and fishing, and mining and quarrying), without financial sector. Available at https://doi.org/10.2908/ISOC_CISMT.

**Figure 2 - EU Businesses Paying to Advertise on the Internet Advertising Method and Size (2024)**




*Source:* Eurostat (online data code: isoc_cismt)

eurostat

targeting, which adjust content for the user location (Figure 2).[131] ICT services, accommodation and travel, and wholesale and retail trade are the sectors that rely the most on online advertisement.[132]

**Social networking services.** Social networking services have become one of the most widely adopted digital platform services for EU businesses. It allows firms to build brand awareness and foster customer relationships at a fraction of the cost of traditional marketing channels.[133] Social marketing is gaining in importance due to

[131] "Internet Advertising of Businesses - Statistics on Usage of Ads," Eurostat accessed May 12, 2025, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Internet_advertising_of_businesses_-_statistics_on_usage_of_ads.

[132] "[Isoc_cismt] Social Media Use by Type, Internet Advertising and Size Class of Enterprise."

[133] Les Dolega, Francisco Rowe, and Emma Branagan, "Going Digital? The Impact of Social Media Marketing on Retail Website Traffic, Orders and Sales," *Journal of Retailing and Consumer Services* 60 (May 1, 2021): 102501, https://doi.org/10.1016/j.jretconser.2021.102501. Maurizio Dallocchio et al., "The Role of Digitalization in Cross-Border E-Commerce Performance of Italian SMEs,"

the reliance of end users on social media for consumer decisions. Reports say, for example that nearly half of consumers (48%) turn to social media when searching for places to eat and drink, with this number increasing to 53% among those aged 18 to 24.[134] Eurostat' reports that 61% of EU businesses were using social media in 2023 varying between 38% (Bulgaria) and 87% (Malta). Among large countries, French and Spanish businesses are bigger users of social media than German and Italian ones.

## B. Estimating DMA Provisions' Negative Impact on European Businesses

We estimate the impact of the DMA provisions on EU businesses by estimating the potential loss in revenues due to the degraded efficiency and quality of the online digital services impacted by the DMA that EU businesses widely use.

### 1. Methodology

It is hard to quantify the many ways in which the DMA provisions impact the value to businesses of the impacted digital platform services. We consider the empirical evidence presented in Section IV and select those efficiency losses that are most likely to impact all firms. We then identify further loss of efficiencies that will impact those sectors and firms that more intensely use digital platform services and benefit from more sophisticated tools. We apply these percentage revenue losses to the value of the B2C web sales of the businesses using digital platform services to get a minimum and potential impact estimate for those businesses adopting digital platform services.

We then apply the percentage loss of revenue to the total value of the turnover of digital platform service adopters by country and sector to retrieve the total value of the lost revenue for the sector and country. We present the total loss of revenue aggregated across the EU in terms of percentage of total turnover for the sector, including adopters and non-adopters of digital platform services.

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*Sustainability* 16, no. 2 (January 2024): 508, https://doi.org/10.3390/su16020508; Garicano et al. 2024, *supra* note 123, Section II.C.2.b. and Table 1.

[134] "Impact of Social Media in the Hospitality Industry Explained," accessed June 2, 2025, https://trengo.com/blog/social-media-in-the-hospitality-industry, https://trengo.com/blog/social-media-in-the-hospitality-industry.

We retrieve turnover, the share of B2C webs sales, and digital platform adoption data from Eurostat for all EU businesses in the sectors considered. We exclude the primary sector, construction, and wholesale trade as not being significantly reliant on the digital platform services targeted by the DMA. We also exclude financial intermediation, utilities, and health services due to lack of data and the inability to disentangle B2C activities. The list of sectors considered is presented in the Annex.

The methodology relies on two key estimates: the percentage of revenue impacted and the percentage loss of revenue from the loss of platform service efficiency after the DMA.

The percentage of revenue impacted are the direct B2C sales of adopters of digital platform services. A high proportion of businesses have a website in the EU, which could already be considered an implicit adoption of online search. We consider that the impact of the DMA will mostly affect businesses that actively use digital platform services to increase sales, so we choose the adoption of online advertising as the benchmark for digital platform service adoption. The adoption rates for specific digital services by sector obtained from Eurostat are presented in Table 3.

We discuss in the calculation of the percentage revenue loss in the next section (Section V.B.2).

To summarize, our estimation builds on the following assumptions:

- We use adoption rate of online advertising services to proxy the percentage of firms that actively use CPS for the direct purpose of acquiring customers and generating sales. To the extent that some firms rely exclusively on marketplaces or social media engagement to raise revenue, our analysis could underestimate true adoption of digital platform services.
- Firm level revenues for adopters of digital platform services are proxied by the average firm revenue for the country and sector as we cannot distinguish the levels of turnover across these two groups.
- We only consider the share of revenues obtained from direct website sales to consumers as potentially impacted. To the extent that advertising and other online tools also raise offline sales, we are underestimating the full impact.

**Table 3 – Digital Platform Services Adoption Rates by Sector in the EU (2023)**

| Sector | Online Advertising Usage | Social Media Usage | Marketplace Web Sales Usage | Share of Total EU Net Turnover |
|---|---|---|---|---|
| Accommodation and food service activities | 42% | 78% | 25% | 1.3% |
| Accommodation | 57% | 85% | 59% | 0.5% |
| Administrative and support service activities | 33% | 59% | 3% | 2.5% |
| Information and communication | 48% | 83% | 4% | 4.2% |
| Professional, scientific and technical activities | 30% | 67% | 1% | 3.0% |
| Real estate activities | 35% | 57% | 6% | 1.3% |
| Retail trade, except of motor vehicles and motorcycles | 41% | 67% | 13% | 6.9% |
| Transportation and storage | 17% | 43% | 3% | 4.1% |

Sources: Eurostat, Social media use by type, internet advertising and size class of enterprise, https://ec.europa.eu/eurostat/databrowser/product/page/ISOC_CISMT, Variables *E_ADS* and *E_SM1_ANY*; Eurostat, E-commerce sales of enterprises by size class of enterprise, https://ec.europa.eu/eurostat/databrowser/product/page/ISOC_EC_ESELS, Variable I; Eurostat, Enterprise statistics by size class and NACE Rev. 2 activity (from 2021 onwards), https://ec.europa.eu/eurostat/databrowser/product/page/SBS_SC_OVW, Variable *NET_MEUR*.

Notes: Not all NACE level 1 sectors are shown due to data unavailability, so percentages in "Share of Total EU Net Turnover" do not sum to 100%. Data on online ads are for 2024, not 2023.

## 2. Loss of Revenue from DMA Provisions

As explained in Section IV, the provisions of the DMA impact the efficiency of digital platform services and the revenue of business users through many different channels across services and tools. The overall impact will vary depending on the digital platform services used and the intensity of that usage. Table 4 summarizes the existing quantification of the impact of the DMA provisions - or of equivalent measures - on revenues from the literature referenced in section IV.

## Table 4 - Empirical Evidence of Impact of DMA on EU Businesses

| Online Service | Event | Revenue Impact |
|---|---|---|
| Online Advertising Services | Loss of targeted ads. | • Cost of customer acquisition increases by 50%.[135] |
| Online Advertising Services | No personalisation of ads. | • Click-through rate from 25% to12%.[136] |
| Online Advertising Services | GDPR implementation (consent). | • -5.7% loss of revenue per click[137] |
| Online Advertising Services | GDPR implementation (consent). | • 2% loss of commerce revenue on website.[138] |
| Online Search Services | Placement demotion of Google Hotel Ads after DMA. | • 30% drop in Hotel Ads CTR.<br>• 36% drop in direct bookings from Hotel Ads; 08% overall loss in direct bookings after costly mitigation.[139] |
| Online Search Services | Elimination of free direct links on Google hotel. | • Drop in 12% in reservations.[140] |
| Social Networking Services | Elimination of valuable social graph signal for targeting (Group Membership on LinkedIn). | • CTR falls from 0.72% to 0.36%.[141] |
| Online Intermediation Services | Elimination of personal data for home-page recommendations. | • 75% drop in the click-through-rate of recommended products.<br>• 33% drop in product views.<br>• 81% drop in the purchases of home page recommendations.[142] |

[135] "What Is Personalization? | McKinsey."

[136] Tucker, "Social Networks, Personalized Advertising, and Privacy Controls."

[137] Wang, Jiang, and Yang, "The Early Impact of GDPR Compliance on Display Advertising."

[138] Chinchih, Chen, Carl Benedikt Frey, and Giorgio Presidente. *Privacy Regulation and Firm Performance: Estimating the GDPR Effect Globally*. No. 1. Oxford Martin School Working Paper, 2022. https://oms-

We choose two representative quantifications to express the potential revenue loss:

- the effect of requiring explicit consent for the usage of data for advertising.
- the effect of reducing the availability and effectiveness of a dedicated tool for providers of accommodation services that provides added visibility for direct purchases, options for free targeted listings, and valuable integrations that increase the likelihood of transactions.

We discuss our two measures in more detail below.

**Explicit consent for data use in advertising.** There is evidence that implementing the requirement of explicit user consent to use and combine their data decreases the revenue of commerce websites by around 2%.[143] Other research has conservatively estimated the reduction in sales from the consent requirement on display advertisement alone at 0.4%.[144] We apply this percentage to the B2C web sales of business users for each sector by country to obtain the average loss of revenue in the EU from the new consent requirement for platforms' use and combination of data for the purpose of advertising.

**Dedicated tool on online search services.** We use evidence from the hotel industry to estimate the effect of a change in the design of online search services in order to comply with the prohibition of self-preferencing. Data indicates that changes in the Google Search result page to comply with DMA has led to a 36% drop in direct bookings for hotels through Google Hotel Ads.[145] Google Hotels Ads generated 70%

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www.files.svdcdn.com/production/downloads/Privacy-Regulation-and-Firm-Performance-Giorgio-WP-Upload-2022-1.pdf

[139] "DMA Implementation Sinks 30% of Clicks and Bookings on Google Hotel Ads," Mirai, 7 May 2024. accessed April 2, 2025, https://www.mirai.com/blog/dma-implementation-sinks-30-of-clicks-and-bookings-on-google-hotel-ads/. "DMA Impact on Hotels: 0.8% Loss of Direct Reservations," accessed June 2, 2025, https://www.mirai.com/blog/dma-impact-on-hotels-0-8-loss-of-direct-reservations/?utm_source=chatgpt.com.

[140] Julia Luczak-Rougeaux, "Pourquoi le DMA dessert-il les hôteliers indépendants ?," TOM.travel, February 29, 2024, https://www.tom.travel/2024/02/29/pourquoi-le-dma-dessert-il-les-hoteliers-independants/.

[141] "LinkedIn Groups Targeting.", Metric Theory, September11,2020. https://metrictheory.com/blog/linkedin-groups-targeting-the-secret-sauce/

[142] Sun et al., "The Value of Personal Data in Internet Commerce."

[143] Chinchih, Chen, Carl Benedikt Frey, and Giorgio Presidente. *Privacy Regulation and Firm Performance: Estimating the GDPR Effect Globally*. No. 1. Oxford Martin School Working Paper, 2022. https://oms-www.files.svdcdn.com/production/downloads/Privacy-Regulation-and-Firm-Performance-Giorgio-WP-Upload-2022-1.pdf

[144] Goldberg, Johnson, and Shriver, "Regulating Privacy Online."

[145] "DMA Implementation Sinks 30% of Clicks and Bookings on Google Hotel Ads," Mirai, 7 May 2024. accessed April 2, 2025, https://www.mirai.com/blog/dma-implementation-sinks-30-of-clicks-and-bookings-on-google-hotel-ads/.

of direct sales for hotels before the DMA so this drop is equivalent to 25% of all direct sales. We consider this loss to be representative of the revenue impact of losing access to an efficient digital platform service tool. We apply this percentage to the B2C direct web sales of business users for each sector by country to obtain the average loss of revenue in the EU from provisions making direct discovery and sales conversion more difficult. For example, we consider that the retail sector might be similarly affected by a promotion of intermediary websites.

We consider that the impact of the consent requirement will be felt by all firms selling through their websites. We use the second effect relating to the diminished access to a very efficient dedicated tool on online search to approximate the effect of the provisions on those businesses and sectors that rely more intensely and, in use more sophisticated tools, to increase their sales. Access to these tools has been impaired by the restrictions on self-preferencing and data integrations. For example, recommender systems in marketplaces can similarly reward businesses that invest in the platform service. Social networking sites can provide graph integrations that augment reach and sales. These tools are all impacted by the DMA provisions.

We estimate that, for the average European business, the revenue loss from the DMA induced deterioration in the efficiency of digital platform services lies within a range delimited by:

1. the sum of (1) the impact on web sales revenue of the loss in targeting efficiency from requiring consent for personalized ads.
2. the sum of (1) the impact on web sales revenue of the loss in targeting efficiency from requiring consent for personalized ads and (2) the impact of a loss of an online search tool granting direct visibility and valuable integrations on the most popular online search service.

This represents a range between 2% and 27% (the sum of 25% and 2%) of the B2C web sales of business adopters in the sector. These estimates presented in Table 5.

**Table 5 – Revenue Loss of Adopters from DMA Provisions**
**(% of total revenues of adopters of digital platform services)**

| [1] Explicit consent requirements decrease website sales by: 2%<br>[2] Changes in Search decreases direct bookings by: 25% | [A] = % B2C website sales | [B] = [1]*[A] | [C] = [2]*A[] | Minimum Total loss of revenue [B] | Potential Total loss of revenue [B] + [C] |
|---|---|---|---|---|---|
| Accommodation and food service activities | 14.42% | 0.29% | 3.61% | 0.29% | 3.89% |
| Accommodation | 28.73% | 0.57% | 7.18% | 0.57% | 7.76% |
| Information and communication | 5.53% | 0.11% | 1.38% | 0.11% | 1.49% |
| Professional, scientific and technical activities | 1.26% | 0.03% | 0.32% | 0.03% | 0.34% |
| Administrative and support service activities | 5.57% | 0.11% | 1.39% | 0.11% | 1.50% |
| Retail trade | 11.41% | 0.23% | 2.85% | 0.23% | 3.08% |
| Real estate activities | 3.68% | 0.07% | 0.92% | 0.07% | 0.99% |
| Transportation and storage | 4.50% | 0.09% | 1.13% | 0.09% | 1.22% |

Note: Retail trade excludes motor vehicles and motorcycles.

Table 5 present the impact of loss of revenue before any mitigating strategy.

For example, an average EU business in the Accommodation sector relying on advertisement and dedicated online search tools will see a total revenue drop of 7.76%. A technical professional relying on targeted online ads only will see a total revenue drop of 0.03%. It is important to note that this quantification methodology does not incorporate the additional operational and marketing costs arising from the efficiency losses associated with the DMA provisions outlined in Section IV. These costs are difficult to estimate due to limited data availability.

## 3. Economy and Sector-Wide Impact

Calculations for economic impact were performed by sector and country for the selected sectors. The size of the impact as a percentage of total turnover increases with the rate of adoption of digital platform services of the sector and the average share of online B2C sales. Results are shown by sector for the EU aggregate.

In addition to the adoption rate and volume of website sales, the impact will vary with the intensity of the usage of digital platform services. Businesses can have a website and rely on organic search only, they can buy online ads, or they can run

very sophisticated social media campaigns and rely on platform integrations to augment their reach and efficiency. The minimum and maximum value for the sectors captures this wide range of usages.

The results indicate that the revenue loss for some sectors are significant (Table 6). The Accommodation activities are the most impacted with a revenue loss across the EU amounting up to 3.59% of total turnover, equivalent to EUR 14 billion. Retail trade is the next sector affected with a revenue loss across the EU in the range of 0.08% and 1.12% of total turnover. Its weight in the economy means that the potential revenue loss falling between EUR 4.4 billion (if retailers were to only use advertisement) and EUR 59 billion, accounting for the benefit of more sophisticated tools.

Across all the sectors considered, which amount to the services sector except for health, utilities, and financial intermediation, the total loss for the EU is between 0.05% and 0.64% of total turnover with a strictly minimum impact of EUR 8.4 billion and a potential impact of EUR 113.7 billion.

**Table 6 – Estimated Revenue Loss by Sector due to the DMA**
**(2023 revenues baseline)**

| Sector | Total Net Turnover (Million EUR) | Digital Platform Services Adoption Rate | Lost Revenue (Million EUR) | | Lost Revenue (Share of Net Turnover) | |
|---|---|---|---|---|---|---|
| *Revenue Loss Scenario* | | | Minimum | Maximum | Minimum | Maximum |
| Accommodation and food service activities | 991,493 | 36.0% | 1,036 | 13,902 | 0.10% | 1.40% |
| Accommodation | 391,466 | 46.2% | 1,031 | 14,041 | 0.26% | 3.59% |
| Administrative and support service activities | 1,917,404 | 30.4% | 642 | 8,756 | 0.03% | 0.46% |
| Information and communication | 3,225,901 | 43.3% | 1,535 | 20,792 | 0.05% | 0.64% |
| Professional, scientific and technical activities | 2,202,491 | 27.0% | 178 | 2,020 | 0.01% | 0.09% |
| Real estate activities | 1,010,616 | 32.2% | 228 | 3,226 | 0.02% | 0.32% |
| Retail trade | 5,284,007 | 36.3% | 4,408 | 59,023 | 0.08% | 1.12% |
| Transportation and storage | 3,161,770 | 15.4% | 438 | 5,943 | 0.01% | 0.19% |
| **Total** | **17,793,680** | **31.8%** | **8,466** | **113,662** | **0.05%** | **0.64%** |

Sources: Eurostat, Social media use by type, internet advertising and size class of enterprise, https://ec.europa.eu/eurostat/databrowser/product/page/ISOC_CISMT, *E_SM1_ANY*; Eurostat, Enterprise statistics by size class and NACE Rev. 2 activity (from 2021 onwards), https://ec.europa.eu/eurostat/databrowser/product/page/SBS_SC_OVW, Variable *NET_MEUR*.

Eurostat ICT usage in enterprises; Eurostat Structural Business Statistics; Eurostat Annual national accounts.
Note: The digital platform services adoption rate presented is the weighted average of the adoption rates in each EU country. Retail trade excludes motor vehicles and motorcycles.

Table 7 translates the loss of revenue into a first order effect in labour productivity loss. We calculate the total turnover by employee and the loss in the yearly revenue per worker. The average fall in sales per worker across all the sectors considered could fall by EUR 1,122 per year depending on the intensity in the usage of digital platform services across the various sectors.

**Table 7 - Loss of Revenue per Worker for EU firms due to the DMA (2023)**

| Sector | Total Net Turnover (Million EUR) | Number of Enterprises | Number of Employees | Revenue Loss per Employee (EUR per person per year) | |
|---|---|---|---|---|---|
| *Revenue Loss Scenario* | | | | Minimum | Maximum |
| Accommodation and food service activities | 991,493 | 429,998 | 13,399,304 | 77 | 1,038 |
| Accommodation | 391,466 | 90,930 | 3,922,791 | 263 | 3,579 |
| Administrative and support service activities | 1,917,404 | 239,084 | 22,732,496 | 28 | 385 |
| Information and communication | 3,225,901 | 146,034 | 11,342,034 | 135 | 1,833 |
| Professional, scientific and technical activities | 2,202,491 | 275,384 | 11,804,559 | 15 | 171 |
| Real estate activities | 1,010,616 | 103,920 | 3,927,214 | 58 | 821 |
| Retail trade | 5,284,007 | 334,454 | 21,290,710 | 207 | 2,772 |
| Transportation and storage | 3,161,770 | 228,554 | 16,776,958 | 26 | 354 |
| **Total** | **17,793,680** | **1,757,428** | **101,273,275** | **84** | **1,122** |

Sources: Eurostat, Social media use by type, internet advertising and size class of enterprise, https://ec.europa.eu/eurostat/databrowser/product/page/ISOC_CISMT, *E_SM1_ANY*; Eurostat, Enterprise statistics by size class and NACE Rev. 2 activity (from 2021 onwards), https://ec.europa.eu/eurostat/databrowser/product/page/SBS_SC_OVW, Variable *NET_MEUR*.

Note: Retail trade excludes motor vehicles and motorcycles.

European sectors with employment and growth potential, such as retail and tourism, appear to be particularly impacted, particularly so because they rely on dedicated tools across a variety of services. We describe them in more detail below focusing on the Accommodation part of the tourism services.

### *Accommodation*

The Accommodation sub-sector is an example of a highly impacted activity due to its very heavy reliance on digital platform services for sales. In 2021, independent hotels reported that 44% of their sales came through online travel agencies ("OTA"), while 48% were direct bookings (30% offline and 18% online).[146] Overall 62% of independent hotels' sales are transacted online. Chain hotels are less reliant on OTA and more reliant on direct sales. In 2021, 41% of independent hotels and all hotel chains used metasearch engines to advertise their accommodation, with Google Hotel Ads being the most used channel with an adoption rate of 60%.[147]

Social networking platforms like TikTok, Instagram, or Facebook play an increasing role in showcasing destinations, experience, and hotels.[148] Engaging visuals and review sites enhance credibility and influence customer decisions.

Integrations with real time booking systems, review systems, and secure payment options have also made it easier for customers to make reservations and for hotels to save on operation costs.[149]

The main effect of the DMA provisions on the EU Accommodation sector is the following:

- **Reduced Direct Bookings**: Post-DMA adjustments led to a 0.8% decrease in direct hotel bookings.[150]
- **Decline in Organic Traffic**: Hotels observed a 20% reduction in organic website traffic, and revenue from Google's Free Business Links decreased by 32%, accompanied by a 41% drop in clicks.[151]

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[146] European Commission. Directorate General for Competition., *Market Study on the Distribution of Hotel Accommodation in the EU: Final Report.* (LU: Publications Office, 2022), https://data.europa.eu/doi/10.2763/264575.

[147] European Commission. Directorate General for Competition.

[148] UP Hotel Agency and Mel Greenlaw, "The Power of Social Media in the Hotel & Hospitality Industry," UP Hotel Agency, December 13, 2022, https://uphotel.agency/the-power-of-social-media-in-the-hotel-and-hospitality-industry/.

[149] "Benefits of Managing Real-Time Reservations in Your Hotel," accessed June 2, 2025, https://www.mews.com/en/blog/real-time-bookings?progression-bar=&mrasn=1444917.1796550.w1HcLC9T .

[150] "DMA Impact on Hotels: 0.8% Loss of Direct Reservations," accessed June 2, 2025, https://www.mirai.com/blog/dma-impact-on-hotels-0-8-loss-of-direct-reservations/?utm_source=chatgpt.com.

[151] Arvindh Yuvaraj, "Google's Response to Digital Markets Act Causes 20% Drop in Organic Traffic for Hotels," *WiT* (blog), June 21, 2024, https://www.webintravel.com/googles-response-to-digital-markets-act-causes-20-drop-in-organic-traffic-for-hotels/.

- **Shift Towards OTAs**: These changes have inadvertently increased the prominence of OTAs in search results, leading to higher distribution costs for hotels and greater dependency on third-party platforms. [152]

According to our estimates, changes in the Google Search results page is likely to decrease the revenue of the hotels using digital platform services by EU accommodation sector by 7,76% just from the changes in personalisation and search (Table 5). This is equivalent to a loss of 3.59% of the entire turnover of the Accommodation sector in the EU, or up to EUR 14 billion (Table 6). This loss in revenue translates to an average loss of revenue for the sector across the EU up to EUR 3,579 per worker per year (Table 7).

### *Retail Sector*

Retailers in the EU rely extensively on digital platform services to market and sell their products. About 67% of retailers across the EU use social networking services for the purpose of advertising, social marketing, and direct sales.[153] Social media channels have become powerful tools for showcasing products, building brand identity, and engaging directly with consumers. E-commerce platforms also allow these businesses to sell their products beyond physical locations, providing 24/7 access to customers and increasing sales opportunities. Overall, 12.8% of retail sales in the EU are made online. In 2024, about 11.4% of all retail sales in the EU were made through companies' websites and 1.4% of retailers' sales are transacted through marketplaces.[154] About 13% of EU retailers sell to final consumers through online marketplaces. [155]

Retailers are, together with the hospitality sector, some of the heaviest users of online advertising for targeted campaigns with a 41% adoption rate across the EU.

Together, digital platform services help retail businesses improve visibility, boost sales, and create more personalized shopping experiences.

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[152] Arvindh Yuvaraj, "Google's Response to Digital Markets Act Causes 20% Drop in Organic Traffic for Hotels," *WiT* (blog), June 21, 2024, https://www.webintravel.com/googles-response-to-digital-markets-act-causes-20-drop-in-organic-traffic-for-hotels/.

[153] Eurostat, "Types de Médias Sociaux Utilisés, Publicité Sur l'internet, Par Activité de La NACE Rév. 2" (Eurostat, 2025), https://doi.org/10.2908/ISOC_CISMTN2.

[154] Eurostat, "Valeur Des Ventes Électroniques, Par Activité de La NACE Rév. 2" (Eurostat, 2025), https://doi.org/10.2908/ISOC_EC_EVALN2.

[155] Eurostat, "Ventes Électroniques, Par Activité de La NACE Rév. 2" (Eurostat, 2025), https://doi.org/10.2908/ISOC_EC_ESELN2.

A review of the effect of the DMA provisions indicates the main channels for the impact on EU retail sector are the following:

- **Reduced Ad Targeting Efficiency** from the requirements to obtain explicitly consent for data aggregation and usage for advertising.
- **Decline in Organic Traffic** from stronger presence of intermediaries in the search result pages.
- **Less Efficient Recommender Systems** from restrictions on the largest marketplaces to optimize ranking
- **Loss of Useful Integrations** such as integrations with Maps, Reviews, or Reservations. Less centralized systems are costlier to coordinate and maintain in real time.

According to our estimates, the DMA provisions are likely to decrease the revenue of retailers using digital platform services in the EU accommodation sector by 3.1% due to the changes in personalisation and online search on the most used digital services platforms (Table 5). This is equivalent to a loss up to 1.1% of the entire turnover of the Retail sector in the EU or a loss between EUR 4.4 billion to 59 billion (Table 6). This loss in revenue translates to an average loss of revenue per worker for the sector in the EU up to EUR 2,772 per year (Table 7).

## II. Concluding Remarks

The results presented in this section measure the first round of effects of the DMA and capture the impact of the loss of performance of affected digital services platforms, still the most used by businesses selling to consumers. An analysis of potential benefits of the DMA provisions in terms of better or cheaper competitive alternatives to the digital platform services in scope would be required for a full effect. Two years after the implementation of the DMA, we are still mostly observing the costs imposed, with no quantified benefits to businesses from the facilitation of entry. The benefits, if and when they occur, will have to more than compensate for the costs imposed by the DMA to have a positive effect on the majority of EU businesses and on the European economy.

The economic losses stem directly from the functional disruptions outlined in Sections III and IV. By mandating data separation, limiting platform-driven ranking mechanisms, and restricting integrations, the DMA reduces:

- The **reach** of businesses due to fragmentation of intermediaries, less optimized recommender systems, and loss of social integrations;
- The **relevance** of search results and advertising due to lower levels of personalization and less efficient ranking;
- The **trust and quality** of platform ecosystems through fragmented ratings and less of curated experiences;
- The **efficiency of coordination** from loss of efficient integrations, which increases transaction costs and decreases conversion rates for businesses.

The economic consequences are substantial. The aggregate average loss of revenue from the impairment in the efficiency of the online platform services used by European businesses due to the implementation of DMA provisions ranges from a vary bare minimum of EUR 8.5 billion to EUR 113.3 billion across key service sectors. This could amount to 0.64% of the total turnover of these sectors across the EU and is also associated with a loss of revenue per worker up to EUR 1,122 per year. The impact varies greatly across sectors.

Efforts to promote competition at the level of platform services must be weighed against the associated costs that some of these sectors and firms will bear. These represent real trade-offs that warrant careful consideration. The DMA seeks to create room for new entrants by curbing the advantages of incumbents. While certain provisions may indeed facilitate entry and support long-term competition, the immediate loss in value should not be overlooked. A decline in the functionality and efficiency of core platform services should neither be treated as inevitable nor accepted as a necessary consequence of regulatory intervention. To justify the short-term economic disruptions already impacting the business ecosystem, any long-term gains in market contestability must be both substantial and timely.

Finally, careful implementation of the DMA likely requires a careful assessment of the underlying rationale for platform organization and the benefits it delivers. In some cases, fostering platform differentiation and inter-platform competition may offer a more efficient path to enhancing entry and user choice. The assumption that unbundling platform services inherently promotes competition risks overlooking the organizational logic and efficiency gains of integrated platform ecosystems.

Rather than focusing on disaggregation, policymakers could prioritize measures that stimulate inter-platform competition—encouraging diversity in service offerings, governance structures, and monetization models. A more nuanced regulatory approach would preserve the value-generating features of digital platforms while advancing the broader objectives of fairness, user choice, and market contestability.

As the DMA moves toward review in 2026, policymakers will need to carefully weigh the trade-offs between long-term competition goals and the short-term economic costs borne by Europe's most vital businesses.

# Appendix

**Table A1 – List of Sectors Included in the Analysis**

| Category | Sectors Included |
|---|---|
| Accommodation and food service activities | • Accommodation<br>• Food and Beverage Service Activities |
| Accommodation | • Accommodation |
| Administrative and support service activities | • Rental and Leasing Activities<br>• Employment Activities<br>• Travel Agency, tour operator reservation service, and related activities<br>• Security and Investigation Activities<br>• Services to Buildings and Landscape Activities<br>• Office administrative, office support and other business support activities |
| Information and communication | • Publishing Activities<br>• Motion picture, video and television programme production, sound recording and music publishing activities<br>• Programming and broadcasting activities<br>• Telecommunications<br>• Computer programming, consultancy and related activities<br>• Information service activities |
| Professional, scientific and technical activities | • Legal and Accounting Activities<br>• Activities of Head Offices; Management Consultancy Activities<br>• Architectural and engineering activities; technical testing and analysis<br>• Scientific research and development<br>• Advertising and market research<br>• Other professional, scientific and technical activities<br>• Veterinary activities |
| Real Estate Activities | • Real Estate Activities |
| Retail trade, except of motor vehicles and motorcycles | • Retail trade, except of motor vehicles and motorcycles |

| | |
|---|---|
| Transportation and storage | • Land Transport and Transport via Pipelines<br>• Water Transport<br>• Air Transport<br>• Warehousing and support activities for transportation<br>• Postal and courier activities |

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