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ECONOMIC MECHANISMS OF STATE REGULATION OF DIGITAL OLIGOPOLIES IN EU COUNTRIES

Abstract

This article examines the nature and specificity of digital oligopolies in the European Union, their economic characteristics, and the sources of their market power. It outlines the evolution of EU regulatory policy – from ex-post (retrospec-

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tive) to ex-ante (preventive) approaches – with particular attention to the implementation of the Digital Markets Act (DMA). The study analyses the lobbying expenditures of EU digital platforms, the degree of market concentration in the EU digital ecosystem, and the resulting need for differentiated state regulation of platform services within the Union. The article proposes a Herfindahl–Hirschman Index (HHI) scale suitable for modelling user behaviour, assessing economies of scale, and evaluating platform-to-platform interactions, as well as an analytical system of criteria for clustering digital platforms by market structure type, integrating both economic and structural parameters.

Key Words:

antitrust regulation, clustering, Digital Markets Act, digital oligopoly, ex-post and ex-ante approaches, gatekeepers, lobbying, market power.

JEL: L13, L40, L86, D72, K21, H11.

2 tables, 6 figures, 39 references.

Problem Statement

The rapid pace of technological innovation, the scale of network effects, low marginal costs, and multidimensional business models (two-sided / multi-sided platform markets, cloud services, advertising ecosystems) under conditions of market digitalization have created new challenges for traditional theories of competitive advantage and for state regulatory instruments. At the level of the European Union, a shift is observed from relying exclusively on retrospective (ex-post) enforcement of competition law toward a combined approach: integrating the outcomes of past (retrospective) investigations and fines with preventive (ex-ante) rules and obligations for large platforms. It should be noted that a governmental decision is considered «ex-ante efficient» when it maximizes welfare across all future scenarios relative to other possible policy options. One of the EU's central tools in this regard is the Digital Markets Act (DMA) – a regulation

that sets clear criteria for designating «gatekeepers» and imposes a set of obligations and prohibitions on large platforms in order to ensure «contestable and fair digital markets» (European Commission, n.d.; European Parliament & Council of the European Union, 2022).

The purpose of this article is to identify the specific features of the formation and regulation of digital oligopolies in the European Union and to substantiate the need for clustering digital platforms according to structural and behavioural criteria to enhance the effectiveness of competition policy.

To achieve the stated objective, the study sets out to address the following tasks:

- analyse the economic characteristics of digital oligopolies in the EU;
- identify the sources of market power in traditional and digital market structures;
- assess the current system of digital market regulation within the framework of the Digital Markets Act;
- examine the relationship between market power and lobbying expenditures of digital platforms;
- develop analytical criteria for clustering digital platforms to enable further differentiated regulation.

The relevance of the study stems from the growing market power of large digital platforms in the EU, which generates new challenges for competition policy and economic security. Under conditions of increasing market concentration and the rising political influence of major technology corporations, there is a pressing need to develop differentiated mechanisms of state oversight that take into account market structure, scale of operations, and the level of lobbying expenditures.

Literature Review

Research on the digital economy, platform services, and the market structures associated with them has in recent years attracted increasing attention both in academia and among practitioners. Tirole (2017) emphasizes that digital platforms create new forms of market power through network effects and control over «gateways». Similarly, the OECD report «The Evolving Concept of Market Power in the Digital Economy» highlights that traditional competition indicators (market share, margins) must be complemented by measures of data access, entry conditions, and switching costs (OECD, 2022). This new paradigm therefore poses a fundamental challenge for scholars and policymakers: how to quantitatively measure digital market coverage and how to regulate digital markets in order to preserve competition (Crémer et al., 2023; Cini & Czulno, 2022).

In the academic literature, platforms are defined as two-sided or multi-sided markets in which one group of users (for example, end consumers) and another group (for example, business users or advertisers) interact through an intermediary infrastructure. Parker et al. (2016) identify three typical sources of platform power: scale, network effects, and data. In the EU context, researchers additionally note the increasing relevance of political connectivity and lobbying efforts by major digital players (Zabokrytskyy, 2020; Murphy, 2007). Thus, an analysis of platform market power must go beyond simple metrics such as revenue share or traffic volume.

The theoretical foundations of market structures were established by classical economists: monopoly denotes a single dominant player; duopoly – two; oligopoly – several large competitors; and monopolistic competition – many firms with relatively limited individual control (Askar, 2020; Escrihuela-Villar & Guillén, 2025). In the digital economy, as noted by Lundqvist (2019), the boundaries between these categories become blurred due to rapid technological change, scalability, international expansion, and the importance of dynamic market processes – where a market that appears oligopolistic today may adopt a different structure tomorrow (Eckardt, 2025).

EU competition policy has traditionally relied on ex-post enforcement, but with the transformation of digital markets, ex-ante regulation is increasingly applied. Specifically, the Digital Markets Act (European Commission, n.d.; European Parliament & Council of the European Union, 2022; Maksymova et al., 2023) establishes clear criteria for designating platforms as “gatekeepers” and introduces obligations aimed at countering self-preferencing and ensuring interoperability. Academic sources emphasize that ex-ante approaches enable regulators to respond more swiftly to the concentration of power within digital platforms (Maher, 2024; Akman, 2022; Cabral et al., 2021).

Researchers note that the lobbying expenditures of digital platforms correlate with their market power and ability to shape the regulatory environment. For example, Kenney & Zysman (2020) analyse how major technology corporations use lobbying resources to influence norms and standards. Comparable findings are confirmed in the EU context: authorisation procedures, access to data, and competition standards frequently evolve under the influence of large platforms (Vezzoso, 2024; Fletcher et al., 2024; De Petris et al., 2020; Lyzun et al., 2024).

Thus, the literature review demonstrates that digital platforms are not merely technological intermediaries but key actors in the contemporary digital economy that require new analytical and regulatory tools. The combination of economic mechanisms, regulatory criteria, and user-behavioural indicators provides a foundation for clustering platforms by market structure (Ozili, 2025; Eckardt, 2025). This approach is particularly relevant in the EU context, where regulators are already implementing instruments such as the DMA for targeted intervention, while further research should focus on empirical data, indicators, and regulatory outcomes to support the development of an effective policy framework.

Methodology

The research methodology is based on a combination of approaches drawn from several scientific domains. The study integrates elements of market structure theory, the political economy of regulation, as well as instruments of institutional analysis applied in the field of European Union digital policy (Crémer et al., 2023; Fletcher & Vasas, 2024). This combination makes it possible to align a quantitative assessment of market concentration with an examination of the regulatory and governance mechanisms that shape the behaviour of major digital platforms.

To accomplish the research objectives, a set of analytical methods was employed, each contributing a specific dimension to the study.

The comparative approach enabled the examination of concentration indicators across key segments of the digital economy – search services, social networks, advertising platforms, and mobile operating systems – based on data from Statista, Worldbank, and other sources. This allowed to trace how the market shares of leading technology corporations (Alphabet, Meta, Amazon, Apple, Microsoft, ByteDance) have evolved and how oligopolistic structures have formed within the European market.

A content analysis of official EU documents – including the Digital Markets Act, the Digital Services Act, the European Data Strategy, and OECD analytical reports – made it possible to identify the logic of the current regulatory model. This analysis clarified the key changes taking place in EU competition policy, particularly the shift from reactive ex-post enforcement to preventive ex-ante regulation.

The analytical component is grounded in the EU's regulatory framework, relevant OECD reports, decisions of European regulatory authorities, and contemporary academic studies (Crémer et al., 2023; Fletcher et al., 2024; Żądło, 2023). The research integrates economic models (entry barriers, network effects, platform market characteristics) with legal analysis (competition rules, case law, regulatory instruments), enabling a broader interpretation of the processes under investigation.

In summary, the chosen methodological framework combines descriptive, analytical, and normative components, providing a comprehensive basis for examining the nature of digital oligopolies and assessing the potential of state regulatory mechanisms. The combination of statistical analysis and qualitative examination of regulatory documents ensures the multidimensional and interdisciplinary character of the study.

The proposed methodological approach can also be applied in future research on the development of the digital economy, particularly in assessing the impact of the Digital Markets Act and the further evolution of antitrust oversight within the European Union.

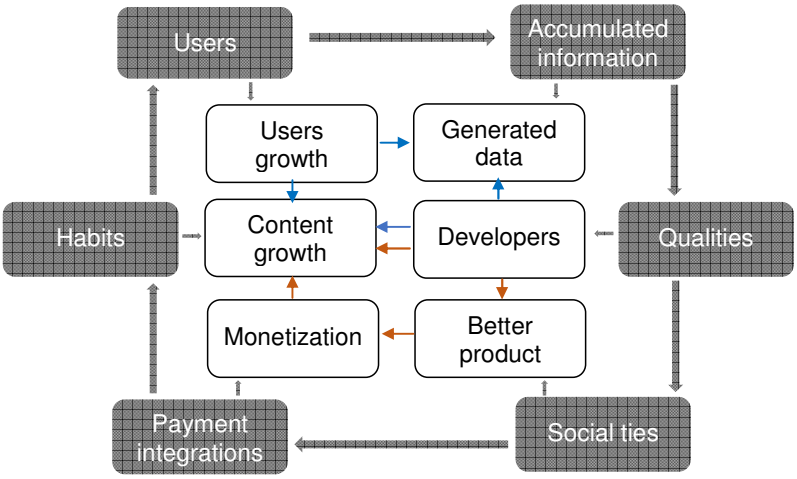
Research Results

In the traditional economic sense, an oligopoly refers to a market dominated by a small number of large firms. Its key characteristics include interdependent behaviour among market participants, high entry barriers, and the ability to engage in differentiated pricing. In the digital environment, these characteristics take on specific forms due to network effects, «by-products» of platform business models, and externalities that amplify first-mover advantages (Cennamo et al., 2023; Decarolis et al., 2023).

A network effect implies that the value of a service to a user increases with the number of other users. For digital marketplaces (such as Amazon), search engines (for example, Google), social networks (Instagram, TikTok), and digital ecosystems (Apple App Store), this creates self-reinforcing cycles (Figure 1).

Figure 1

Self-reinforcing cycles of digital platforms



Source: authors' own elaboration.

In this environment, significant technological constraints for new entrants become evident. The development of such platforms requires business models built on behavioural and predictive data. As a result, a relatively stable market configuration emerges in which a small group of international corporations maintains control over several interconnected digital segments. This type of market is increasingly described by the term «platform oligopoly» (Sauvagerd et al., 2024).

In classical oligopolistic structures, the sources of market power – the ability to influence prices or restrict competition – are shaped primarily by well-understood structural and behavioural factors.

First, high market concentration, when a substantial share of the market is held by a few major firms, creates favourable conditions for coordinated or parallel strategic behaviour, reinforcing their dominant position (Askar, 2020; Escrihuela-Villar & Guillén, 2025).

Second, significant entry barriers – such as high initial investment requirements, restricted access to technology or infrastructure – discourage potential competitors and enable incumbent firms to preserve dominance (OECD, 2006).

Third, product differentiation, including branding strategies or consumer loyalty, reduces demand elasticity and weakens price competition. Moreover, information asymmetries between sellers and consumers may strengthen the advantages of firms that possess more complete or accurate datasets.

Consequently, traditional oligopolistic markets operate according to a logic of strategic interaction among a few large firms that influence price levels, output volumes, and invest in mechanisms to maintain competitive advantages.

In the digital environment, the sources of market power retain some traditional features but are supplemented by new factors characteristic of the platform economy (Kittaka et al., 2023; Eckardt, 2025). Foremost among these are network effects: the more users a platform attracts, the more valuable it becomes for each subsequent participant. Economies of scale and scope also play an important role, with even substantial audience growth being accompanied by very low marginal costs. Data becomes the key resource – its accumulation and utilisation generate a unique competitive advantage, reinforcing the position of digital giants (OECD, 2022).

Another defining feature of digital markets is the high switching costs between platforms and the limited feasibility of simultaneous use of multiple services (multi-homing). This results in the formation of «closed ecosystems» in which a dominant platform can effectively «lock in» the user and retain them over long periods (OECD, 2022). Within such configurations, large digital companies function as «filters» or «gatekeepers» between different groups of users, granting them additional strategic advantages.

Moreover, many digital platforms simultaneously operate across multiple segments – functioning as two-sided or multi-sided markets and offering integrated bundles of interconnected products or services, thereby generating portfo-

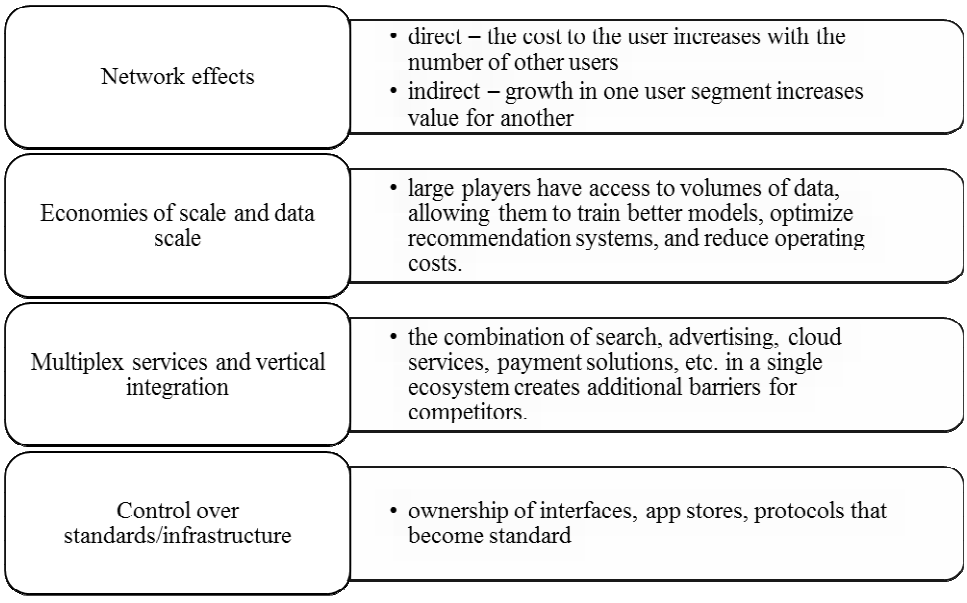
lio effects (Prado, 2021). As a result, digital oligopolies differ from conventional industrial markets not only through classical entry barriers or high concentration but also through a range of additional factors arising from the specific nature of digital technologies and platform-based business models.

Unlike traditional sectors, where market power is predominantly determined by production scale and structural barriers, in digital markets the key drivers include network effects, multi-sided interactions, the feasibility or infeasibility of multi-homing, and data dependency. These shifts require updated approaches to competition policy and antitrust oversight – approaches that consider not only traditional sources of market power but also the new dynamics specific to digital ecosystems (OECD, 2022).

A synthesis of existing research makes it possible to conceptualise digital oligopolies as a type of market structure in which a small number of firms hold dominant positions in specific domains – such as search engines, social networks, or mobile operating systems – characterised by substantial entry barriers that significantly hinder new competitors and thereby sustain the dominance of a few leading players (Figure 2).

Figure 2

Sources of dominance in a digital oligopoly



Source: authors' own elaboration.

These sources of market power enable a small number of platforms to maintain «stable» market shares, act strategically (for example, through pricing schemes, subtle discrimination against third parties, or specific contractual conditions for partners), and deter new entrants by rapid scaling or by acquiring emerging competitors.

Traditional antitrust regulation of oligopolies and monopolies has been based on an ex-post approach: competition authorities investigate anti-competitive practices and impose fines or behavioural remedies. However, in the case of digital platforms, where market dynamics can rapidly solidify competitive advantages, ex-post instruments often prove delayed or insufficient.

This is precisely why the European Union adopted the Digital Markets Act (DMA), an ex-ante regulatory initiative that establishes obligations for «gatekeepers» and aims to prevent the emergence or reinforcement of anti-competitive conduct (European Commission n.d.; European Parliament & Council of the European Union, 2022). The DMA introduces clear criteria for designating a platform as a gatekeeper, along with a detailed set of prohibitions and obligations designed to ensure contestability and fairness in digital markets (European Commission, n.d.).

The European Commission has identified 22 companies and services that fall under the scope of the EU Digital Markets Act (European Commission, 2023):

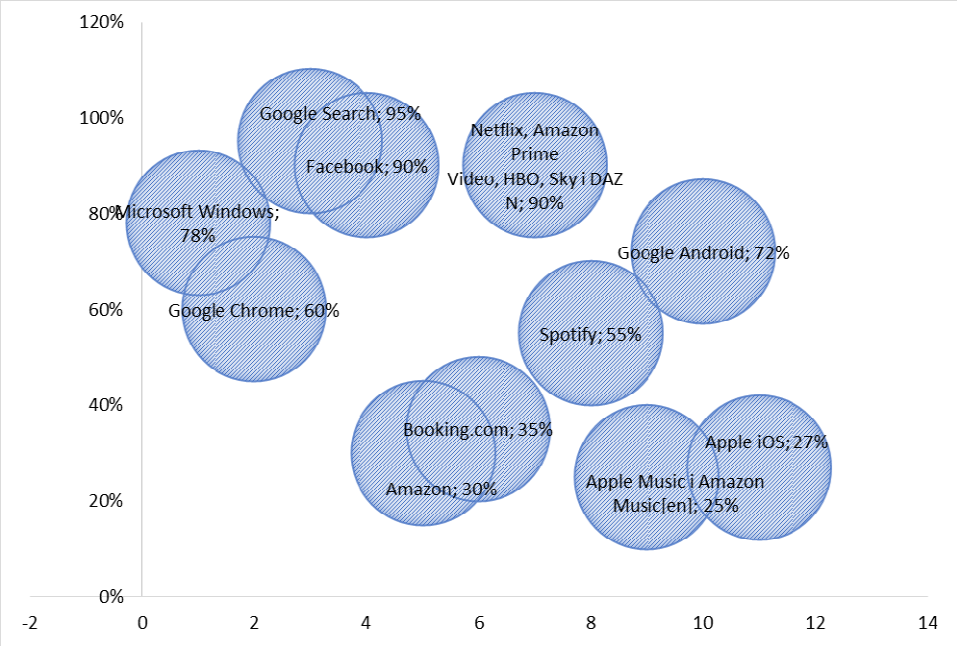
- Social networks: TikTok, Facebook, Instagram, LinkedIn.
- N-IICS or messaging services: WhatsApp, Messenger.
- Intermediation services: Google Maps, Google Play, Google Shopping, Amazon Marketplace, Apple App Store, Meta Marketplace.
- Video-sharing platforms: YouTube.
- Advertising services: Google, Amazon, Meta.
- Web browsers: Chrome, Safari.
- Search engine: Google Search.
- Operating systems: Android, iOS, Windows.

The European Commission also formally designated which technology companies – and which of their services – qualify as «gatekeepers» under the DMA. The list includes six major technology corporations: Alphabet, Amazon, Apple, Meta, and Microsoft, as well as the Chinese company ByteDance.

However, the designated gatekeepers hold different market shares within the EU digital ecosystem (Figure 3).

Figure 3

Market shares of key digital platforms in the EU digital market, %



Source: compiled by the authors based on European Commission (2020).

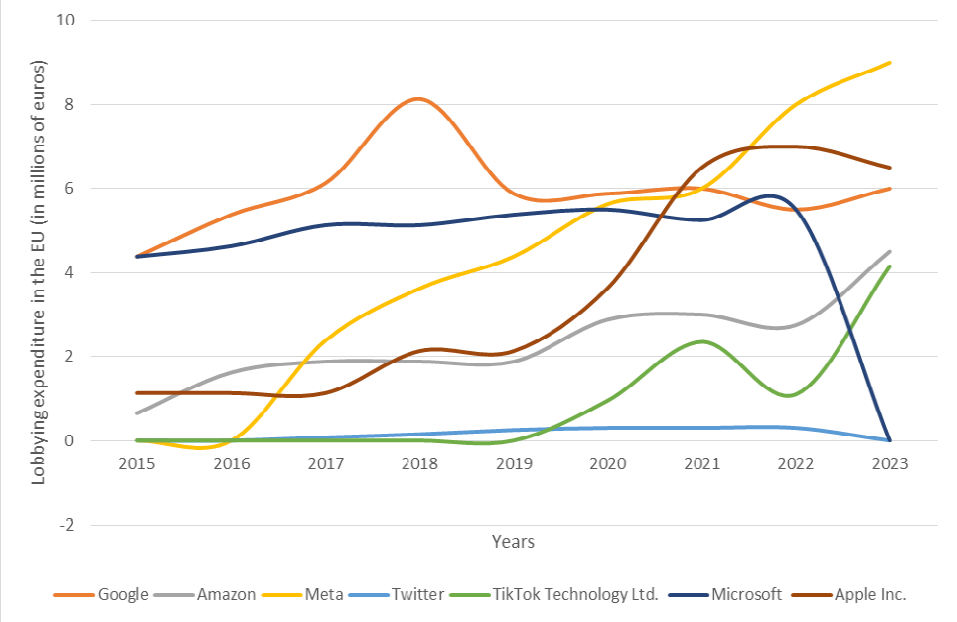
However, in the identification of traditional oligopolies, the combined market share of the top 3 to 5 firms typically ranges between 60% to 80%, while in monopoly-like conditions it exceeds 90%. Yet, as shown in Figure 2, the key «gatekeepers» designated in the EU under the Digital Markets Act (DMA) include digital platforms whose market shares vary widely – from 25% to 95%. Such an approach does not account for the differentiation of gatekeepers by market share within the EU and standardises core obligations for all platform services (European Commission, 2020).

The oligopolistic digital market of the European Union is shaped by a small number of large companies that control the main segments of the digital economy – search engines, social networks, mobile operating systems, online marketplaces, digital advertising, cloud services, and more.

In the EU digital economy, major platforms such as Meta, Alphabet, Amazon, Apple, Microsoft, and ByteDance not only command significant market shares but also allocate substantial resources to lobbying, which serves as an indirect indicator of market concentration and influence (Figure 4).

Figure 4

Lobbying expenditures of key digital platforms in the European Union, 2015–2023 (in million euros)



Source: compiled by the authors based on Statista (2024).

The analysis shows that companies allocate substantial resources to lobbying activities. In 2023, Amazon spent €4.5 million within the European Union, focusing on digital retail issues and European initiatives, including intellectual property rights. Meta spent €9 million in the EU, demonstrating a steady increase in lobbying expenditures over several years. Google allocated €6 million, with the company's peak spending occurring in 2018 following the entry into force of the General Data Protection Regulation (European Parliament & Council of the European Union, 2016). Twitter directed approximately €300,000 in 2022 – an amount significantly lower than that of market leader

Meta. TikTok Technology Ltd., owned by ByteDance, spent €4.15 million, prioritising the European Democracy Action Plan and the Digital Services Act. Microsoft invested €5.5 million in lobbying activities; between 2010 and 2021, the company exhibited moderate spending growth, from €4.63 million in 2010 to approximately €5.25 million at the last measured stage. Apple Inc. spent between €7 and €7.99 million, with its 2018 expenditures nearly doubling after the implementation of the EU data protection regulation for citizens of the EU and EEA (European Parliament & Council of the European Union, 2016) – rising from €1.125 million in 2017 to €2.125 million the following year. Apple's lobbying efforts were directed at supporting a range of European initiatives, including the Digital Markets Act (DMA), which seeks to ensure fair competition among technology and digital companies in the European market.

Thus, the presented data confirm that the EU views lobbying as an element of participatory democracy that fosters «pluralistic dialogue» and enhances the quality of expertise in policymaking. At the same time, the analysis reveals considerable disparities in lobbying expenditures among digital platforms, highlighting the relevance of their clustering. The DMA, in turn, sets clear criteria for designating gatekeepers – platforms that provide core services and serve as an «important gateway» between business users and end consumers.

The quantitative parameters defining gatekeeper status under the Digital Markets Act (European Commission, n.d.; European Parliament & Council of the European Union, 2022) include indicators such as company size, number of users, and economic presence in the market. Firms designated as gatekeepers are subject to a specific set of obligations and prohibitions. These include restrictions on self-preferencing of their own products or services over those of third-party business users; prohibitions on combining user data across different core platform services (CPS) without consent; requirements to enable competitive conditions for business users; and ensuring that users have the ability to freely choose and transfer their data. Designated gatekeepers must also submit compliance reports on DMA obligations, undergo independent audits of their user profiling methods, and may face fines imposed by the European Commission of up to 10% of global turnover – and up to 20% for repeated infringements – or be subject to structural and behavioural remedies (Carugati, 2023).

This system of obligations and designations significantly transforms the regulatory approach to digital platforms. Instead of traditional ex-post competition enforcement, the DMA introduces ex-ante restrictions and obligations imposed before specific violations occur. Such a framework allows regulators to address structural advantages of large platforms – network effects, data access, and economies of scale – immediately, thereby enhancing transparency and competition in digital markets. However, the regulation does not always account for differences in platform functioning depending on their market structure – whether monopoly, duopoly, or oligopoly.

Against the backdrop of these trends, it is useful to examine the dynamics of market share changes in social networks across European countries (Table 1 and Figure 5).

Table 1

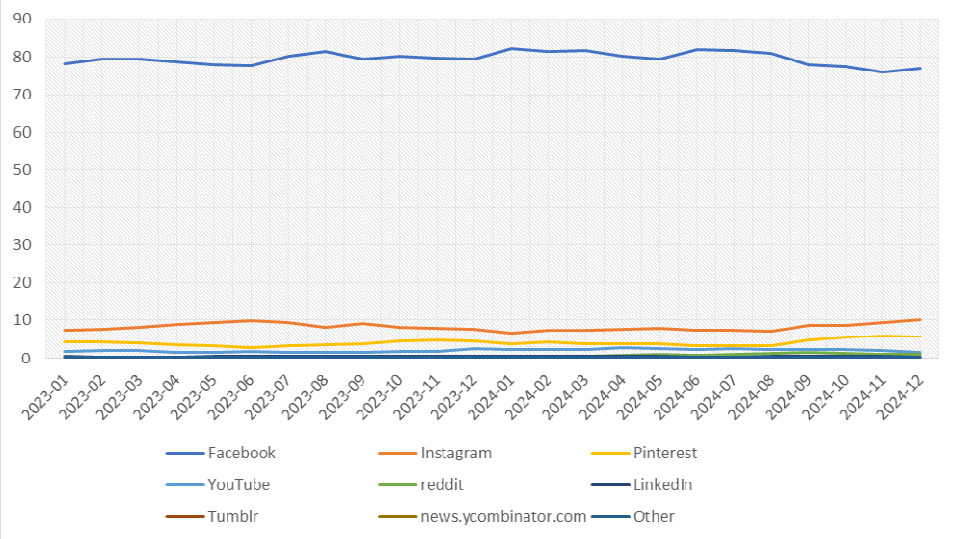
Dynamics of social network market shares in European countries, 2023–2024 (month-by-month)

Date	Facebook	Instagram	Twitter	Pinterest	YouTube	reddit	LinkedIn	Tumblr	news.ycombinator.com	Other
2023-01	78.27	7.43	6.44	4.19	1.86	0.44	0.72	0.35	0.02	0.03
2023-02	79.35	7.66	5.3	4.23	2.06	0.38	0.41	0.31	0.04	0.02
2023-03	79.52	8.24	4.84	4	2.01	0.39	0.48	0.27	0.02	0.01
2023-04	78.7	8.97	5.7	3.61	1.63	0.37	0.49	0.3	0.02	0.01
2023-05	77.89	9.45	6.05	3.37	1.64	0.37	0.64	0.35	0.01	0.01
2023-06	77.62	9.81	6.39	2.69	1.86	0.41	0.7	0.29	0.02	0.03
2023-07	80.23	9.26	4.23	3.3	1.55	0.39	0.56	0.25	0	0.03
2023-08	81.4	8.1	4.23	3.45	1.47	0.37	0.52	0.27	0	0.01
2023-09	79.33	9.16	4.25	3.89	1.56	0.38	0.59	0.29	0	0.03
2023-10	80.1	8.16	4.32	4.4	1.76	0.29	0.52	0.28	0	0.01
2023-11	79.65	7.98	3.98	4.86	1.9	0.46	0.61	0.36	0	0.01
2023-12	79.33	7.58	4.35	4.62	2.46	0.54	0.6	0.33	0.01	0.01
2024-01	82.19	6.8	3.36	3.86	2.26	0.48	0.56	0.28	0.02	0.01
2024-02	81.27	7.43	3.22	4.23	2.28	0.52	0.55	0.29	0.03	0.01
2024-03	81.48	7.32	3.21	3.66	2.39	0.62	0.62	0.39	0.02	0.07
2024-04	80.12	7.61	3.59	3.79	2.8	0.79	0.66	0.33	0.03	0.04
2024-05	79.45	7.9	4.04	3.81	2.65	1	0.64	0.26	0.03	0.04
2024-06	81.75	7.47	3.37	3.33	2.38	0.88	0.36	0.19	0.04	0.01
2024-07	81.51	7.37	3.43	3.27	2.52	1.07	0.36	0.16	0.03	0.03
2024-08	80.94	7.29	3.83	3.39	2.26	1.4	0.51	0.14	0.04	0.03
2024-09	78.01	8.54	3.9	4.69	2.34	1.49	0.57	0.19	0.04	0.04
2024-10	77.48	8.55	3.94	5.48	2.3	1.25	0.52	0.24	0.02	0.02
2024-11	75.92	9.26	4.57	5.96	1.98	1.21	0.61	0.27	0.03	0.01
2024-12	76.89	10.02	3.78	5.8	1.61	0.98	0.41	0.33	0.01	0.01

Source: compiled by the authors based on statcounter (n.d.).

Figure 5

Dynamics of social media market shares in European countries, 2023–2024, %



Source: compiled by the authors based on statcounter (n.d.).

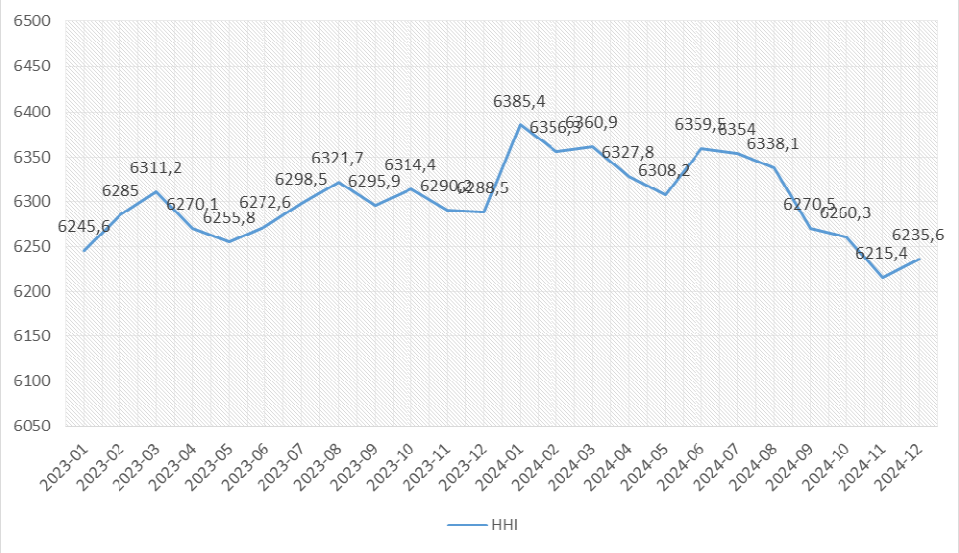
The presented diagram illustrates the structure of social networks, with Facebook holding the leading position among social media platforms in the European Union. At the same time, other networks face intense competition within the market.

Using the market share percentages of social networks, we calculate the Herfindahl–Hirschman Index (HHI) for each month. This indicator reflects market concentration and helps assess the extent to which the market is controlled by a few major players, based on the traditional classical scale (Spiegel, 2021):

- HHI = 0–1500: low concentration (a highly competitive market);
- HHI = 1500–2500: moderate concentration (a medium level of competition);
- HHI > 2500: high concentration (large firms dominate, indicating an oligopolistic market structure) (Figure 6).

Figure 6

Results of calculating the Herfindahl-Hirschman Index based on social media market shares in European Union countries, 2023–2024, share in units



Source: calculated by the authors.

According to the traditional Herfindahl–Hirschman Index (HHI) evaluation scale, the social network markets of the European Union demonstrate a high level of market concentration, dominated by large companies.

However, the presented calculations reveal a significantly higher HHI level for digital firms (in this case, social networks) compared with classical traditional markets. Additionally, the strong network effects characteristic of digital markets raise the question of whether the classical scale is adequate. Therefore, it is appropriate to propose an HHI scale specifically tailored to digital companies.

If the market leader holds 80%, then s_1^2 = 6400 (HHI ≥ 6400). An HHI value of approximately 6000 corresponds to a situation in which the leader controls around 77% to 78% of the market – an indication of a single-platform dominance in social networks. Due to network effects, such a share provides an almost irreversible competitive advantage.

The standard threshold of «> 2500 = concentrated market» is too low for social networks, where even a value of around 3000 corresponds to a leader with ~55% market share. In digital environments, a 55% share may indicate oligopoly rather than absolute dominance. Raising the threshold to approximately 6000 provides a more informative classification for industries characterised by strong network effects.

Based on the statistical sample, a Herfindahl–Hirschman Index scale for digital companies (social networks in EU countries) can be outlined (Table 2).

Table 2

Herfindahl–Hirschman Index scale for social networks in European Union countries

Class	Interval HHI (0–10000)	Interpretation (in fractions $s_{1)}$
Pure competition, where there are many moderate/small players	HHI < 1500	$s_1 < \sqrt{1500} \approx 38.7\%$
Competition where there is no clear leader, but there are major players	1500 ≤ HHI < 2500	$38.7\% \leq s_1 < 80.0\%$
Oligopoly, one or several large players	2500 ≤ HHI < 6000	$50.0\% \leq s_1 < \sqrt{6000} \approx 77.5\%$
Functional monopoly, where one platform dominates	HHI ≥ 6000	$s_1 > 77.5\%$

Source: developed by the authors.

According to the proposed scale, the social network market in the European Union currently exhibits a functional monopoly. However, as soon as Facebook's competitors expand their user base, the Herfindahl–Hirschman Index (HHI) for this segment will decline to an «oligopolistic» level.

The rapid digitalisation of society and the emergence of new competitive environments have necessitated a rethinking of classical approaches to assessing market concentration (Pliatsidis, 2024). Traditional HHI intervals – developed for commodity markets with low entry barriers – have proven insufficiently sensitive to the specific characteristics of digital ecosystems, particularly the social

media market. Unlike traditional markets, digital platforms operate in an environment shaped by amplified network effects, data dependency, algorithmic asymmetries and rapid scalability, all of which lead to non-standard forms of market power. These features justify the need for a specialised HHI interpretation scale tailored to digital players.

The analysis of social network market shares in EU countries in 2023–2024 revealed a stable dominance of a single platform – Facebook – whose market share exceeds 78% in most months.

Under the classical HHI scale, such an indicator would automatically categorise the market as «highly concentrated». However, this classification is overly general and fails to distinguish between a market with relatively elastic competition and a situation in which network effects create a de facto single-platform dependency.

The calculated HHI values for social networks in the EU demonstrate far higher levels of concentration than classical models anticipate. Most monthly values range between 6000 and 6400, corresponding to a scenario in which the minimum guaranteed share of the market leader is 77% to 80%. Such a level of dominance in the digital environment is not an anomaly, but rather a typical consequence of scale effects, personalised recommendations and «user lock-in» within a single ecosystem.

Therefore, the proposed HHI scale for digital platforms enables a more accurate assessment of the real nature of competition and helps distinguish traditional oligopoly from «functional monopoly» – the latter emerging from strong network effects. The scale provides a more precise tool for determining the degree of competition, assessing the stability of dominant firms, analysing risks of platform dependency, digital inequality and potential threats to innovation dynamics.

Expanded HHI intervals assist digital-market regulators (particularly within the EU) in making decisions regarding antitrust measures, identifying platforms with excessive market power and designing mechanisms to support competition. Moreover, companies operating in media, marketing and advertising can use the scale to assess risks associated with excessive audience concentration on a single platform, plan channel diversification, and optimise digital communication strategies. More broadly, the scale can be applied in modelling user behaviour in complex network systems, analysing economies of scale and evaluating platform-to-platform interactions within the framework of platform competition.

Unlike classical markets, dominance in digital environments is not always driven by pricing strategies or entry barriers. Modern network platforms accumulate market power through:

- network effects, whereby platform value increases with the number of users;

- large datasets enabling sophisticated recommendation systems and personalised user experiences;
- algorithmic advantages that competitors cannot quickly replicate;
- ecosystem effects, where switching to another platform is inconvenient due to lost contacts, content or functionality.

In such conditions, a market may appear «competitive» in terms of the number of platforms, yet functionally operate as monopolised. The proposed scale addresses this problem by accurately reflecting market structures under contemporary digital realities.

The developed scale provides a foundation for future scientific work. Promising directions include expanding the model with additional indicators of digital market power, studying behavioural user characteristics, constructing predictive models of competition in AI-driven environments and comparing market structures across digital sectors. The scale is an analytical tool that captures environments where network effects and algorithmic dynamics play a critical role. Its application enhances the accuracy of market-structure analysis, supports effective regulatory policy formation and lays the groundwork for further research in the digital economy.

Given market shares, self-reinforcing platform cycles, sources of dominance and lobbying expenditures, it is advisable to define platform obligations within the EU on a cluster-based principle to ensure effective regulation of digital oligopolies.

For clustering purposes, it is proposed to apply analytical criteria that make it possible to identify digital platforms according to their market structure, including:

- the dynamics of market share of major platforms in the EU;
- the Herfindahl–Hirschman Index (HHI);
- annual revenues of European digital platforms;
- annual lobbying expenditures in the EU;
- the percentage of platform users within the EU.

Applying this system of criteria provides a comprehensive instrument for clustering platforms by market structure type, combining economic, structural, and political indicators of market power.

The use of market share, HHI, revenues, lobbying expenditures, and user reach allows not only a quantitative assessment of market concentration but also a qualitative determination of the degree to which platforms influence competition and EU regulatory policy. This approach contributes to a deeper understanding of the relationship between economic strength and political influence among digital

companies – an essential element for shaping a balanced European digital market policy.

As a result of such clustering, it becomes possible to clearly determine which platforms belong to monopolies, duopolies, oligopolies, or markets of monopolistic competition, thereby creating a foundation for targeted state regulation and antitrust oversight in the EU digital economy.

Conclusions

To effectively counteract the monopolisation of digital structures, the European Union does not explicitly differentiate between «digital oligopolies», «digital monopolies», or «digital monopolistic competition». Instead, it pursues a strategy centred on the development of the Digital Single Market and the Digital Europe programme, aimed at preventing the dominance of large international corporations and stimulating the digital transformation of European businesses. Digital market regulation must therefore maintain a delicate balance: overly strict requirements may suppress innovation, while overly lenient rules may allow market power to become entrenched.

The EU seeks to create a level playing field that prevents excessive dominance by global digital firms. Its regulatory framework combines targeted ex-ante obligations for designated gatekeepers with robust ex-post enforcement tools, sanctions for abusive practices, and mechanisms ensuring access to data and technical expertise, all supported by flexible and technically competent regulatory authorities. Such an integrated approach allows the European Union to intervene early where necessary, respond to emerging risks, and maintain contestability across digital markets.

To ensure the implementation of this strategy, it is essential to continue supporting the DMA while simultaneously strengthening intergovernmental coordination in order to avoid regulatory arbitrage and the reinforcement of «weak links». The development of specialised national units capable of responding rapidly to local market dynamics and working closely with EU institutions is equally important. Introducing interoperability and data portability requirements where appropriate can reduce switching costs and safeguard market openness. At the same time, intensified monitoring of start-up acquisitions is needed to prevent the tactical absorption of innovative competitors. Further progress should include advancing algorithm auditing methods and strengthening transparency mechanisms for ranking and clustering systems, enabling the detection and prevention of discriminatory practices in digital ecosystems.

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