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**Study on the competition
conditions in the online
advertising sector in Spain**

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List of acronyms

AAS	Advertiser ad servers
ACCC	Australian Competition and Consumer Commission
ACCO	Catalan Competition Authority (<i>Autoritat Catalana de la Competència</i>)
AdIC	Competition Authority (<i>Autorité de la Concurrence</i>)
AEPD	Spanish Data Protection Agency (<i>Agencia Española de Protección de Datos</i>)
CCB	Canada Competition Bureau
CMA	Competition and Markets Authority
CNMC	National Commission for Markets and Competition (<i>Comisión Nacional de los Mercados y la Competencia</i>)
CPA	Cost-per-action
CPC	Cost-per-click
CPI	Clicks-per-impression (clicks on each ad, also CTR)
CPL	Cost-per-lead
CPM	Cost-per-impression
CPS	Cost-per-sale
CPV	Cost-per-view
CTR	Click-Through Rate (also CPI)
DMA	Digital Markets Act
DMP	Data Management Platforms
DSA	Digital Services Act
DSP	Demand-Side Platforms
ECN	European Competition Network
EDPB	European Data Protection Board
FPA	First-price auction
FTC	Federal Trade Commission

GDPR	General Data Protection Regulation
IAB	Interactive Advertising Bureau
IO	Insertion orders
IP	Internet protocol
LSSI	Law 34/2002, of July 11, 2002, on information society services and electronic commerce
LOPDGDD	Law on the Protection of Personal Data and Guarantee of Digital Rights
MS	Member States
OTT	Over-the-top (services offered over the Internet without any control or specific management by network operators)
PAS	Publisher ad servers
PGT	Programmatic Guaranteed Transactions (closed agreements)
PMP	Private marketplaces (closed marketplaces)
RTB	Real-time bidding
SPA	Second-Price Auction
SSP	Supply-Side Platforms
SERP	Search Engine Results Page
TV	Television

Executive summary

Digitalisation is creating disruption across the economy, enabling the emergence of new goods and services and changing the way familiar services are delivered or the way consumers interact with businesses or with each other. One of the sectors where the impact of digitalisation is most clearly visible is advertising.

Advertising is one of the key sectors for competition throughout the economy, as it allows advertisers to reach their current or potential consumers when they have new or improved products. Therefore, a more competitive functioning of the advertising industry will help start-up or innovative companies to better communicate their messages. This will increase the efficiency of the whole economy by empowering businesses and consumers with greater choice to make optimal decisions.

Within the different advertising channels, the online channels have been particularly relevant in recent years. **Advertising has become the main source of funding for the content we consume on the internet.** And some of the large technological platforms that have acquired a notable weight in the provision of various digital services have grown especially financed by advertising revenues, most notably Google and Facebook. Other platforms not so prominent in the marketing of online advertising (such as Amazon, Microsoft or Apple) are increasingly beginning to include it among their main sources of revenue.

This relevance of digital platforms explains certain changes in the **legal framework** that have been addressed or proposed. For example, the European and Spanish data protection regulation introduced in recent years (although it is a horizontal regulation that also applies to non-digital sectors) has an important impact on digital markets and particularly on online advertising, given the fundamental role of the accumulation of personal data for the personalisation of advertising and the measurement and management of campaigns. Data protection law requires the individual's informed and clear consent to the use of his or her personal data.

On the other hand, there is a recent proposal by the European Commission for a Digital Markets Act (DMA) that establishes a specific regulation on certain agents (gatekeepers) relevant to the provision of certain digital services, including online advertising. This proposal considers, for example, the obligation to provide advertisers and publishers with information on the remuneration of the different services provided by the intermediary (so that the advertiser also knows the final payment to the publisher) and access to performance measurement tools that allow their own independent verification. A number of other requirements are also set out (notably those related to interoperability or data

accumulation), which may have a particular impact on digital platforms funded with online advertising.

The **economic characterisation** shows that in Spain, as in most developed countries, the volume of revenue from **online advertising exceeds that of traditional media** (such as television, radio or the press). The CNMC's internal estimates (obtained from requests for information to sector agents) suggest that **its weight in Spain could have exceeded 3,450 million euros** in 2019 (more than the traditional media combined, approximately 2,000 million euros from television advertising, 700 million in press and magazines and 500 in radio) with annual growth rates that may have been around 20% per year in the most recent years.

This revenue volume comes from two main channels (given the lesser importance of other channels, such as "classified" ads or advertising via e-mail, which are not analysed in detail in this report).

On the one hand, **search advertising**, which results from advertisements that may appear alongside "organic" results associated with keyword searches in a general search engine. Search already denotes consumer interest in certain products or services, so advertisers seek to "monetise" this interest with consumer actions that bring the consumer closer to purchase or actually lead to the purchase (website visit, account registration and creation, direct purchase, etc.). According to the CNMC's internal estimates, **search advertising could have generated around 1,500 million euros in Spain in 2019 and the weight of Google in it may exceed 90%** (in line with what happens in other geographical areas).

On the other hand, **display advertising**, which results from advertisements that may appear in different formats (video, banners, "native" advertising...) during our browsing on websites and mobile applications (apps). In general, with this advertising, advertisers aim to improve brand awareness and brand image, although they may also, in certain ad formats, seek specific consumer actions (such as clicks and visits to the website that may lead to purchase or other actions, such as registration and account creation). According to the CNMC's internal estimates, **advertising on display could have generated in Spain some €1,950 million in 2019 and the weight of Facebook (including Instagram) may exceed 40%** (in line with what happens in other geographical areas), with Amazon and Youtube (the latter owned by Google) at a notable distance.

Display advertising is already outpacing search advertising in Spain (and this trend is common in most developed countries). Display advertising is growing on average more quickly than other forms of online advertising, heavily relying on video formats, mobile

devices and social media inventory. In this respect, two marketing models in online advertising should be highlighted.

On the one hand, the **inventory of platforms**, notably Google, Facebook and Amazon, which **market their own offer directly** (without intermediaries). For example, within the total display advertising in Spain (€1,950 million in 2019), platforms can account for up to €1,150 million, with growth rates that can be around 25% annually in the most recent years.

On the other hand, the **inventory of publishers with a primarily national audience** (such as digital newspapers or internet TV and radio or apps), where **intermediaries** are needed to close deals with advertisers and media agencies. This is the so-called **open display**, which may have accounted for around €800 million in 2019 in Spain. New technologies and forms of trading mean that intermediaries are needed to match transactions, notably advertisers' ad servers, demand side platforms (DSPs), supply side platforms (SSPs) and publishers' ad servers. **Concentration in these intermediation services is also high in Spain, with Google's weight accounting for more than 50%-70%** depending on the type of service. Amazon and Facebook are also present in this intermediation work, although with lower weights than Google.

One of the main keys in this evolution is that these companies so prominent in the monetisation of their own inventory (such as Google, Facebook or Amazon) are also competitive in the intermediation of third-party inventory (in the open display). The reason for this is the **fundamental role played by data**: these companies accumulate first-hand data from consumers' navigation within their ecosystems and this data allows them to increase their ability to personalise and optimally manage advertising campaigns, not only on their own inventory but also on that of third parties.

The analysis of the online advertising sector, with a special focus on the Spanish market, allows us to draw a series of **conclusions**.

On the positive side, online advertising implies **substantial efficiencies**, which should be sought to be preserved. On the one hand, digitalisation has endowed advertising with new features, such as the capacity for **personalisation** (which allows advertisers to better reach their target audience; increases the value of publishers' advertising space; and makes advertising less annoying for consumers by being more relevant to their interests) and for **measuring the performance** of campaigns (helping *a priori* better decision-making by advertisers, agencies and publishers). It has also favoured the entry of **new players and media**, broadening the possibilities for advertisers and consumers. Finally, it has led to the emergence of **new forms of contracting**, which shift from the physical to the digital space, and in which transactions are mass matched in real time.

At the same time, however, there are a number of **risks to competition** that may ultimately harm overall efficiency and, in particular, consumer welfare.

Firstly, the sector tends towards a **notable concentration in very few players**, with two companies (**Google and Facebook**) estimated to account for more than **70% of revenues** in the sector in Spain. By segments, **Google** has more than **90%** of income in **search advertising** and **between 50% and 70%** in the various **open display intermediation services**; while **Facebook** can account for **more than 40%** of revenue in **display advertising**. These figures are truly exceptional, considering that this is a market that has emerged in the last 20 years and where there are no relevant regulatory barriers. They reflect the fact that the dynamics of the sector lead to positions that are difficult to contest. On the one hand, economies of scale and scope are conducive to large, service-integrating operators. But the main cause of this concentration is the role of **data accumulation as a competition variable** and its interaction with network effects. Data increases the competitiveness of platforms in the buying and selling of personalised advertising, also in third-party inventory, and may introduce certain interoperability problems when using different providers, generating **switching costs** and a tendency to concentrate or integrate services in a single provider (**single-homing**). As a result, data can be a barrier to entry and growth in the sector. The role of data also implies the relevance of the merger policy that may be pursued by incumbent operators (such as Google, Amazon or Facebook).

Secondly, there is a **problem of opacity and lack of transparency** in the sector. Actors at the ends of the value chain face a problem of asymmetric information that hinders their optimal decision-making and distorts market power in favour of platforms and intermediaries. On the one hand, advertisers and, to a lesser extent, agencies, **do not have perfect information on the destination of their investment**, especially with regard to the distribution of the budget between intermediaries and the final publisher. On the other hand, medium-sized publishers, who market their inventory on the open display, **do not have perfect information about the end advertiser's** (and their competitors') willingness to pay either, which will make it difficult to make inventory optimisation decisions. In short, while platforms that market their own space directly absorb the advertiser/agency budget, in open display there is a gap between what the advertiser pays and what the publisher receives of between 30%-40% (i.e., the publisher would only receive 60%-70% of the advertiser's committed expenditure). This gap reflects the remuneration of intermediaries, which is not problematic per se (as intermediaries also add value through programmatic matching of transactions and enrichment with audience profiling data), but because of the lack of transparency on the specific remuneration of individual intermediaries, as it hinders optimal decision-making and may consolidate the market power of certain operators, particularly vertically integrated ones. In addition, lack

of transparency may also entail the discriminatory imposition of certain conditions or technical standards that unduly restrict **interoperability**.

Thirdly, integration and concentration in the sector may generate **incentives or risks of competition-distorting behaviour**. Some platforms (notably Google, but also Amazon and, to a lesser extent, Facebook) market their own inventory on an exclusive basis while at the same time they take part in brokering third party inventory. In other words, they combine in a unique way in the market the simultaneous access to their own attractive space, with large and well-profiled audiences, and to the inventory of third parties. This leads many advertisers/agencies to use them as priority or even exclusive buying tools (single-homing), especially in the case of advertisers, generating potential incentives for the extension of market power from one market to another (**leveraging**). It can occur both from the supply side (as publishers) towards their ad buying tools, and in the other direction (as there is a potential conflict of interest if the platforms' buying tools divert the demand in favour of their own inventory). These problems may increase with the vertical integration that characterises the intermediation of ad buying and selling in open display, where Google has a preponderant presence on both sides of the market. Another potential competition-distorting behaviour is discrimination in favour of one's own services (**self-preferencing**). In the open display system, intermediaries order their bids in a sequential auction system. Vertically integrated operators may have incentives to favour their own services. Although such conduct could in theory be sanctioned by advertisers/agencies and publishers (as they are not necessarily accessing the best option), the market power and interoperability advantages of a vertically integrated operator limit the ability of advertisers/agencies and publishers to switch to alternative providers. In addition, the lack of transparency affecting advertisers/agencies and publishers can also make it difficult for them to make optimal decisions when choosing their intermediaries.

Competition problems in the area of online advertising can end up **reducing overall and consumer welfare**. First, **costs** may be higher for **advertisers**, compared to an alternative scenario of increased competition, and are likely to be passed on (wholly or partially) in higher prices for final goods, eroding consumer welfare. As a result, **the role of advertising as a driver** of competition suffers: if firms (especially newly created, small or innovative firms) find it more difficult to publicise their products, efficiency and general welfare suffer across the economy, particularly for consumers, who will be less able to make optimal choices from a wider range of products. On the other hand, the fact that **publishers** also suffer from competition problems in the intermediation and marketing of their inventory may lead them to **reduce their content creation**, with a negative impact on consumers, **or their advertising space**, with a negative impact on advertisers (and on consumers as mentioned in the previous point). Apart from these effects, it should be borne

in mind that online advertising-based business models require a high level of **consumer attention** and **data disclosure**. In a more competitive environment, consumers could even be compensated more for the use of their data. Or they could have more options regarding privacy, price and advertising alternatives, unlike the current model where the only option in order to benefit from certain digital services necessarily involves the transfer of personal data (take it or leave it).

To address the challenges associated with potential competition problems in the area of online advertising, the CNMC makes a series of **recommendations**. The proposed measures are complementary and should be jointly implemented:

1. **Competition authorities must keep enforcing competition policy continuously and decisively as the first line of defence in the online advertising market.** This policy provides the flexibility to assess on a case-by-case basis the effects of a conduct, or of a structural change, on effective competition in the market against the potential efficiencies that may result. An optimal application of competition policy in a market such as online advertising requires action on several fronts, with the aim of ensuring that markets remain contestable (by reducing barriers to entry or switching costs). For example, merger analysis or the use of interim measures or remedies where necessary, in the event of anti-competitive conducts.
2. **Competition policy tools should be complemented by regulation on digital platforms likely to create competition problems.** Regulation and enforcement of competition rules are complementary in nature. In this sense, the European Commission's proposal for a "Regulation on contestable and fair markets in the digital sector" (Digital Markets Act or DMA) is a tool that can improve competition in markets such as online advertising. The current proposal of the DMA includes, within its scope, online advertising and related or adjacent services as core services where platforms with significant market power in the EU internal market (gatekeepers) are obliged to a set of actions. Among the conducts proposed to be regulated by the DMA that may improve the competitive performance of the advertising sector, there are improved transparency in online advertising, interoperability obligations, obligations related to data accumulation, horizontal obligations or obligations aimed at minimising conflicts of interest.
3. **National and European legislators must bear in mind the complex relationship between consumer and privacy protection and the promotion of competition in digital markets in order to empower consumers and ensure their maximum welfare.** Business models based on online advertising are very data-intensive. Some authors have shown that there is evidence that the EU data protection regulation

(GDPR) may have favoured platforms with large audiences to the detriment of smaller publishers. This also implies that the disclosure of data to the platforms is also significant without the consumer being fully aware of it at times. Therefore, to be truly effective, data protection regulation must bear in mind the incentives it generates in the behaviour of agents and, therefore, its impact on competition in digital markets such as online advertising. In this respect, imposing additional obligations on actors in terms of privacy should avoid creating unduly cumbersome burdens on less systemically important operators. It is definitely not about reducing the protection of a good such as consumer privacy. On the contrary, it is about empowering consumers and making them more aware of the use and value of their data. One way to achieve this is to ensure effective compliance with European data protection regulations, for example with regard to data portability. Moreover, it would be desirable for consumers to have more, better and real choices of alternative models, rather than the use of services being necessarily linked, in virtually all cases, to the transfer of personal data. These could be options to benefit from the service without the need for data release (e.g. with a positive monetary price) or the possibility for consumers who voluntarily opt for the release of their personal data to be compensated for it to a greater extent, including monetary incentives.

4. **A multidisciplinary and cooperative approach should be adopted between the institutions involved.** Competition Authorities have to be in the front line to enforce competition policy (should possible anti-competitive behaviour be detected) and to promote competition (to ensure the competitive functioning of the sector, e.g., through an optimal regulatory response). But there are also challenges for independent regulators in related sectors and for Data Protection Authorities. Institutional cooperation between all actors involved is needed. This spirit of institutional cooperation must go beyond the national level, given that in online advertising the competitive dynamics and associated challenges are similar in most developed countries. The CNMC, as competition authority and independent regulator of the telecommunications and audiovisual sectors, integrates a convergent and multidisciplinary vision to provide a global response to the challenges posed by online advertising.
5. **The capacities and means of competition and regulatory authorities must be strengthened.** The Competition and Regulatory Authorities need sufficient resources (means, qualified staff and resources in the financial, technical and technological fields) to cope with the complexity that actions in sectors as complex as online advertising entail. The most important element is that the Competition and Regulatory Authorities have the autonomy to organise their resources in a flexible manner. In this respect, the existing framework in Spain is insufficient to provide the CNMC with full autonomy to

manage its human resources, organisational structure and budget. It is therefore recommended that the national legislator adopts the necessary legal reforms.

1. Introduction

This study aims to analyse the state of competition in the online advertising sector in Spain. In its recent Action Plans, the CNMC has committed to carry out this in-depth analysis of online advertising for several reasons.

First, advertising is a key sector for competition throughout the economy. Fostering competition in the advertising industry not only affects the industry players themselves and improves the welfare of consumers of advertising, but it is also a dynamizing factor for other sectors. A more competitive and efficient functioning of advertising will allow advertisers to better communicate their messages, generating greater choice for companies and consumers, who will be more empowered to make better decisions. It is precisely start-ups, small and innovative companies that most need advertising to be able to compete with incumbents, so the role of advertising is key to promoting business entry, growth and innovation, with a positive impact on competitiveness and long-term growth.

In addition, the CNMC has followed quite an active line of work in recent years on digitalization in the area of competition advocacy. It has prepared studies and reports on the collaborative economy, with a special focus on tourist accommodation (CNMC, 2018a) and transportation (CNMC, 2019) and also on applying new technologies in the Fintech sector (CNMC, 2018b). Although these sectors are very different from online advertising, some of the lessons learned from analysing them can be applied too, e.g., the disruptive role of technology, the relevance of data or the presence of scale, scope, learning and network economies.

On the other hand, online advertising is growing at a remarkable rate (as explained in sections 3 and 4). Understanding the drivers of this expansion is of interest in itself, but especially so for competition authorities. As a sector grows, it becomes more relevant in terms of competition because it starts playing a greater role over the rest of the economy. If, in addition, there are preponderant players in that sector, as is the case of Google or Facebook, the interest of competition authorities is increased.

Analysing online advertising allows the CNMC to contribute, from an intellectual and institutional point of view, to the current debate on the impact of digitalization on competition, (CNMC, 2020) considering that some of the most relevant digital platforms are increasingly (Amazon), and even almost exclusively (Google and Facebook), financed by online advertising.

Finally, advertising is one of the main sources of financing for generating and making internet content available, so competition in online advertising is a determining factor for

the success, diversity and quality of online content and services available through digital media, social media, blogs and content-hosting websites and intermediation platforms.

To carry out this study, the CNMC has relied on several sources of information:

- The public consultation with which the study was launched in the spring of 2019, where 65 contributions were received from different players, including consumers, platforms and publishers. The CNMC is grateful to all those who participated in this public consultation, as they were the first source of information in a tremendously complex sector.
- An intensive series of 25-30 meetings with different players, including advertisers, media agencies, technology platforms, intermediaries and publishers. We also held meetings and a fluid dialogue with other international authorities that are working on this same issue: the Competition Markets Authority (CMA, United Kingdom), the *Autorité de la Concurrence* (AdIC, France), the Federal Trade Commission (FTC, United States), the Australian Competition and Consumer Commission (ACCC, Australia) and the *Bundeskartellamt* (Germany). The CNMC is grateful to all these agencies for their time and the valuable exchange of views and information.
- A round of requests for information from approximately 100 operators from the entire online advertising ecosystem: advertisers, media agencies, intermediaries, platforms, publishers and different associations. This information made it possible to describe the market in Spain quantitatively (see section 4) and also to receive qualitative feedback on possible concerns over competition (see section 5). The CNMC truly appreciates the cooperation of the operators (special thanks to their staff) that have diligently submitted their contributions. We are fully aware of the workload involved due to the complexity of the information and the difficulties experienced in recent months.
- Extensive internal research and review of academic literature and international reports was carried out.

By integrating information from all these sources, the CNMC was able to confirm the strong dynamism of online advertising in Spain, with annual growth rates exceeding 20%. Online advertising thus surpasses the rest of the media (TV, printed press and radio) with revenues around €3.45 billion in Spain in 2019 (between its two components: search and display advertising).

CNMC estimates suggest that Google and Facebook may account for over 70% of this amount. In general, large global audience platforms that trade their own inventory (such as Google, Facebook and Amazon) tend to grow above market average.

Concentration must also be taken into account, especially because of other competition issues in the sector, e.g., mergers, the relevance of data (generating efficiencies and, at the same time, market power), transparency and conditions applied in transactions, the expansion of market power throughout the value chain and vertical integration.

Therefore, ensuring the optimal functioning of this sector is vital to take advantage of its efficiencies (e.g., linked to the capability for personalization) at the minimum cost to competition and consumer welfare. This may imply an ambitious use of competition policy in cases where it is necessary, without prejudice to the existence of complementary digital markets regulation (such as that being considered in the European Union through the proposed Digital Markets Act).

After this first introductory section, this document is organized as follows. Section 2 discusses the sector's legal framework. Section 3 provides an economic analysis of online advertising. Section 4 describes the sector in Spain. Section 5 identifies possible competition issues in online advertising. Section 6 presents the conclusions of the study. Finally, section 7 makes a series of recommendations to improve the sector's competitive operation.

2. Legal framework of online advertising

The purpose of this section is to review the legal framework applicable to the online advertising market. There is no specific set of rules applicable to the sector: regulation is rather scattered in rules on other matters (privacy, digital services and consumer protection). In addition, these regulations generally emanate from the European Union.

First, we will review the regulations on digital services, and then those on privacy and data protection.

2.1. Digital services regulations

Digital services regulations are quite extensive, given the breadth of this type of services. This section deals with those regulatory areas with potential implications for the online advertising sector, such as those on e-commerce, audiovisual media services and other regulations that are in the process of being approved.

2.1.a. E-commerce

Online advertising services, as information society services, fall within the scope of Directive 2000/31/EC of the European Parliament and of the Council of June 8, 2000 on certain legal aspects of information society services, in particular electronic commerce in the internal market, i.e., the **Directive on electronic commerce**. This Directive is the framework legislation for all activities carried out on the Internet. Specifically, this means all services "usually provided in exchange for a compensation, at a distance, by electronic means and at the individual request of a recipient of services¹".

These services include commercial communications, where advertising is included, defined as "any form of communication designed to promote, directly or indirectly, the goods, services or image of a company, organisation or person pursuing a commercial, industrial or craft activity or exercising a regulated profession".

Thus, the Directive on electronic commerce is the framework legislation applicable to a large number of activities, setting out general criteria or guidelines subject to further development by the Member States (MS). Article 6 of the Directive sets out the criteria applicable to online advertising. In particular, it obliges national governments to ensure that both the ad and the person responsible for it are clearly identifiable, as well as

¹ Article 2.a) Directive 2000/31/EC

promotional sales and games or competitions, whose terms and conditions must be accessible, clear and unambiguous.

In addition, the Directive establishes that operators of such services are only subject to regulation on access to providing and using services in the EU country where they have their registered office and not in the country where the servers, email addresses or mailboxes they use are located (country of origin principle).

The Directive was transposed into Spanish law through **Law 34/2002, of July 11, 2002, on information society services and electronic commerce (LSSI)**.

Under the Directive's country of origin principle, the LSSI applies to all information society service providers established in Spain, therefore affecting individuals and legal entities throughout the EU when their business is managed from Spain; they have a branch in Spain; or they carry out most of its commercial operations in its territory².

The LSSI includes a series of obligations of transparency and collaboration with public authorities and a liability regime for providers of this type of services.

However, its most relevant aspect for the online advertising sector concerns privacy, specifically the regime for obtaining consent, as discussed in section 2.2.4.

2.1.b. Audiovisual Media Services

At a European level, Directive 2010/13/EU of the European Parliament and of the Council of 10 March 2010 on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the provision of audiovisual media services, known as the **Audiovisual Media Services Directive**, is the regulatory framework for this type of services. In 2018, an amendment to it, known as the **New Audiovisual Media Services Directive**³, came into force, adapting the previous regulation to new market realities such as converging television and Internet services, the

² Article 2.2. LSSI: "A provider shall be deemed to operate through a permanent establishment located in Spanish territory when it has there, on a continuous or habitual basis, facilities or workplaces in which it carries out all or part of its activity." This concept of permanent establishment is in line with the provisions of Directive 2000/31/EC, which incorporates the case law of the CJEU and determines that "establishment" implies the actual performance of an economic activity through a fixed establishment for an indefinite period of time.

³ Directive 2018/1808 of the European Parliament and of the Council of 14 November 2018, amending Directive 2010/13/EU on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the provision of audiovisual media services (Audiovisual Media Services Directive) in light of changing market conditions.

use of portable devices to watch audiovisual content, new types of content (e.g., short videos and user-generated content) and the consolidation of new providers (e.g., providers of video-on-demand services and video-sharing platforms).

To this end, the scope of the new Directive includes social media services that meet the definition of "video-sharing platform services" or "video-sharing platforms"⁴, where providing user-generated programs and videos is an essential function of such a service, i.e., the audiovisual content "is not merely ancillary or a minor part of the activities of such a service"⁵. Thus, as far as online advertising is concerned, the provisions of the Directive will apply to platforms that meet the definition⁶.

The main implication is that the new Directive places such platforms under the current audiovisual regulations on commercial communications, namely restrictions on child and consumer protection, when communications are marketed, sold or organized by such providers⁷.

However, no changes are made to the liability regime for providers of "video-sharing platform services" or "video-sharing platforms" with respect to audiovisual commercial communications that are not traded, sold or organized by them. The regime set out in the

⁴ Article 1.1. paragraph a) bis of Directive 2010/13/EU.

⁵ The approach adopted by the European Commission in the Communication from the Commission Guidelines on the practical application of the essential functionality criterion of the definition of a 'video-sharing platform service' under the Audiovisual Media Services Directive ([2020/C 223/02](#)) is grouped into four categories:

- 1) The relationship between the audiovisual content and the main economic activity or activities of the service (general platform architecture and design, autonomous nature of audiovisual content, specific functionalities of the service adapted to the audiovisual content, positioning the service in the market);
- 2) Quantitative and qualitative relevance of the audiovisual content available on the service (amount of audiovisual content available on the service; use of audiovisual content by platform users; scope of the platform's audiovisual content);
- 3) Monetisation of, or revenue generation from, the audiovisual content (including commercial communications linked to such content; charging for accessing audiovisual content; sponsorship agreements in connection with uploaded content; tracking user interaction with audiovisual content for advertising or commercial purposes); and
- 4) The availability of tools aimed at enhancing the visibility or attractiveness of the audiovisual content. (aimed at encouraging consumption of audiovisual content; providing users with systems to track performance and manage the content uploaded to the platform).

⁶ In general, the main purpose of the large digital platforms operating in the online advertising market is not providing audiovisual communication services.

⁷ Article 28b (2) of Directive 2010/13/EU.

Directive on e-commerce, which limits the liability of intermediaries for unlawful content uploaded by users and exempts them from the obligation to monitor content continues to apply to them⁸.

In addition, as they are not a television broadcasting service, these platforms are not subject to the quantitative restrictions set forth in the regulation of audiovisual media services⁹, which establishes the right of operators to broadcast advertising messages but imposes time limits on them.

In the field of audiovisual regulation, as with electronic commerce, the country of origin principle applies, according to which the task of supervising providers that offer services in Spain but are established in another Member State does not rest on the CNMC but on the regulatory authorities of that Member State¹⁰.

In Spain, the regulations on audiovisual communication are transposed in **Law 7/2010, the General Law on Audiovisual Communication**. This law has not yet been adapted to the new Audiovisual Communication Services Directive, so it is currently only applicable to traditional audiovisual service providers.

The deadline for transposing the Directive was September 19, 2020¹¹. The Draft Bill of the General Law on Audiovisual Communication (which was in the public hearing and information phase until December 3, 2020 and which will repeal the 2010 regulation) includes the amendments introduced by the new Directive with respect to the provision of video-sharing services through the platform¹².

⁸ The Directive on electronic commerce provides an exemption from liability for unlawful automatic information transfer or storage, transiently and temporarily, or stored by certain information society service providers (articles 12 to 15).

⁹ Included in arts. 19 ff. of Directive 2010/13/EU and transposed into national law in arts. 14 ff. of Law 7/2010 on Audiovisual Communication.

¹⁰ The Directive explains this in recital 33 that: "*The country of origin principle should be considered as the core of this Directive, given that it is essential for the creation of an internal market. It should apply to all audiovisual media services in order to provide legal certainty for the providers of such services, which is a necessary foundation for implementing new business models and deploying such services. The country of origin principle is also essential to ensure the free movement of information and audiovisual programs in the internal market*".

Subsequently, it is included in articles 2.1 and 3.1 for audiovisual communication service providers and in article 28.bis for video-sharing platform service providers.

¹¹ As of April 2021, it has been transposed by Belgium, Denmark, Finland, France, Germany, the Netherlands, Sweden, the United Kingdom and the United States.

¹² The CNMC has published a [Regulatory Project Report on the Draft Bill of the General Audiovisual Communication Law \(IPN/CNMC/042/20\)](#), which proposes clarification in the drafting of the regulation

2.1.c. New proposals from the European Commission (DSA and DMA)

The European Commission has recently published two regulation proposals on digital markets governance¹³.

The proposed **regulation on digital services (the Digital Services Act, “DSA”)** aims to update (increase, in comparison to the Directive on e-commerce) the digital platform responsibility and accountability regime for content that may be illegal or harmful, affecting other aspects such as advertising. The degree of responsibility and due diligence obligations for possible illegal or harmful content or ads is higher for digital platforms (e.g., social media, marketplaces or app stores) with significant market power (over 45 million users, 10% of the EU population).

The **proposed Digital Markets Act (“DMA”)** introduces an *ex ante* regulatory framework for certain particularly relevant digital platforms that act as gatekeepers¹⁴ in providing certain core services, including online advertising and related services such as intermediation (marketplaces and app stores), search engines, social media, video-sharing platforms and number-independent interpersonal communication (in addition to operating systems and cloud computing and storage¹⁵).

The DMA includes a number of obligations¹⁶ that may directly affect online advertising¹⁷, including the obligation to provide advertisers and publishers with information on the remuneration of the different services provided by the intermediary (so that the advertiser

related to the responsibility of video sharing platforms on commercial communications and the exercise of its supervision.

¹³ These proposals must be negotiated and subsequently approved by the European Parliament and the European Council and are, therefore, subject to change.

¹⁴ Article 3 of the DMA introduces a series of qualitative criteria (met based on a series of quantitative requirements) to define them. A company is considered to be a gatekeeper if it has a significant impact on the EU internal market (revenues over €6.5 billion per year in the last three years or capitalization over €65 billion in the last year and is providing services in more than three Member States), with access to many active users in the EU (45 million end-users and 10,000 commercial users) and a consolidated position (meeting user criteria in the last three years). There is also the possibility to designate gatekeepers that only meet qualitative criteria following a "market investigation" (provided in article 15 of the DMA) by the European Commission.

¹⁵ This list of services is included in article 2 of the DMA and could be extended following a "market investigation" (provided in article 17 of the DMA) by the European Commission.

¹⁶ In its articles 5 and 6.

¹⁷ See Articles 5.f and 6.g of the European Commission's DMA proposal.

will also know final payment to the publisher) and access to performance tracking tools that allow its own independent verification.

It also includes a series of obligations that, because they are general obligations or because they influence related services, may affect trading and intermediation platforms of online advertising:

- Interoperability¹⁸ requirements, e.g., the obligation to ensure and facilitate effective portability of the data generated (not only from end users but also from commercial users) and to allow commercial users (or their authorized third parties) to effectively and continuously access aggregated or non-aggregated data in real-time, provided or generated by the activity of commercial users on the platform (and by end users interacting with those services, if they have given their consent).
- Obligations associated to data aggregation¹⁹, e.g., restricting the combination of personal data from different services, unless the user has consented to this specific option; refraining from requiring identification or registration services; allowing software and application changes (e.g., uninstallation, installation and subscriptions) on devices and operating systems; ensuring full interoperability of ancillary services and granting access to anonymized data on search results.
- Horizontal obligations, such as refraining from restricting the ability of commercial platform users to file complaints with the public authorities²⁰.
- Minimizing conflicts of interest, for example, by preventing discriminatory treatment between their own and third-party services in ranking or ordering²¹.

Section 7 offers a preliminary assessment of these proposals.

2.2. Data protection regulations

The regulations on data protection and privacy in the digital environment have undergone significant changes in recent years, and new developments are expected in the near future, given the dynamic nature of this topic. The framework regulation is of European

¹⁸ See Article 6.h and 6.i of the European Commission's DMA proposal.

¹⁹ See articles 5.a, 5.e, 5.f, 6.b, 6.c, 6.e and 6.f and 6.j. of the European Commission's DMA proposal.

²⁰ See Article 5.d of the European Commission's DMA proposal.

²¹ See Article 6.d of the European Commission's DMA proposal.

nature, but there is also national legislation that has been adapted to European regulations and acts as special law in Spain, applicable to the online advertising sector.

Data protection regulations have great relevance in the field of online advertising, since they apply to cookies and other online identifiers, which are key tools in the operation of this market.

Box 1

WHAT ARE *COOKIES*?

The term “cookie” refers to data files that web browsers automatically store on a user's computer when visiting different web pages to retrieve user information for different purposes, generally related to improving browsing and user experience. For example, these files store login information and language settings when a user visits a website so that the user does not have to provide this information each time he or she logs in to the site.

They can also collect information on browsing behaviour or habits and web application activities that allow, among other things, to obtain statistics or create user profiles and segmentation for commercial purposes, so they play a key role in online advertising.

2.2.a. General Data Protection Regulation

Regulation (EU) 2016/679 of the European Parliament and of the Council of April 27, 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data and repealing Directive 95/46/EC (**General Data Protection Regulation, GDPR**) is the general regulatory framework on privacy and personal data processing. The GDPR adapts European regulations to the digital reality.

The principle of transparency of information applies to the entire regulation, moving data controllers from a passive to an active approach²². Compared to the previous regulation, the protection of personal data is enhanced under the GDPR.

²² Article 4 of the GDPR defines “controller” as the “the natural or legal person, public authority, agency or other body which, alone or jointly with others, determines the purposes and means of the processing of personal data; where the purposes and means of such processing are determined by Union or Member State law, the controller or the specific criteria for its nomination may be provided for by Union or Member State law”.

The first implication of this regulatory framework on online advertising is considering online identifiers, such as cookies, personal data when they can identify the individual^{23, 24}.

Thus, although the GDPR is not the specific regulatory framework for cookies, it does apply in this area since they can be considered personal data, given that cookies "may leave traces that [...] can be used for profiling natural persons" (Recital 30 GDPR).

Thus, regarding the protection of personal data offered by the GDPR, it introduces new features with respect to the data subject's consent, defined as a "freely given, specific, informed and unambiguous²⁵" indication of his or her wishes," which must be given "by means of a statement or a clear affirmative action". Therefore, and as stated in recital 32 of the GDPR, "silence, pre-ticked boxes or inactivity should not therefore constitute consent".

The data subject's consent does not necessarily have to be explicit but free, specific, informed and unambiguous²⁶. The GDPR only requires explicit consent for (i) special categories of data (arts. 9.1. and 9.2.a.); (ii) when the data subject is to be subject to a decision based solely on automated processing, including profiling, which has legal effects on the data subject or significantly affects him or her (art. 22.2.c.); or (iii) for transfers of personal data to a third country or international organization (art. 49.1.a.).

²³ Recital 30 of the GDPR states that "Natural persons may be associated with online identifiers [...] such as internet protocol addresses, cookie identifiers or other identifiers [...]. This may leave traces which, in particular when combined with unique identifiers and other information received by the servers, may be used to create profiles of the natural persons and identify them".

²⁴ Article 4.1 of the GDPR defines "personal data" as "any information relating to an identified or identifiable natural person ('data subject'); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person".

²⁵ Article 4 (11) of the GDPR.

²⁶ Art. 6.1 of the GDPR regulates which cases of data processing will be considered lawful. Apart from the data subject's consent, it also provides for the lawfulness of the processing, among others, when it is "necessary for the purposes of the legitimate interests pursued by the controller or by a third party, except where such interests are overridden by the interests or fundamental rights and freedoms of the data subject which require protection of personal data, in particular where the data subject is a child".

Regarding the second case, it is important to highlight that "Article 29 Working Party Guidelines²⁷ on Automated individual decision-making and Profiling²⁸" indicate that behavioural advertising generally does not fall within the scope of art. 22.2 of the GDPR.

In addition, the GDPR (art. 13) specifies the information that must be provided to data subjects when their data is collected, including the identity of the controller, the purposes of the processing, the time the data will be stored and the controller's intention to transfer personal data to a third country or international organization.

Another major implication for the online advertising industry is the introduction of the **right to data portability**²⁹, which comprises:

- i. the right to receive a copy of the data provided to the data subject;
- ii. the right to transfer such data to another data controller; and
- iii. the right to request a direct transfer from one data controller to another (in an attempt to empower individuals by giving them more control over their data).

2.2.b. Law on the Protection of Personal Data and Guarantee of Digital Rights

Organic Law 3/2018 of December 5, 2018, on the Protection of Personal Data and Guarantee of Digital Rights (**LOPDGDD**) amends the previous regulation, in light of the changes introduced by the General Data Protection Regulation with regard to the processing of personal data.

Article 6 enshrines data processing based on the consent of the data subject, referring directly to the GDPR for its interpretation. In addition, it raises the consent of minors from 13 to 14 years of age with respect to the previous regulation.

The new law also includes the GDPR principle of transparency in processing and the duty of information, which obliges the data controller to provide the data subject with basic information when obtaining personal data from the data subject (art. 11).

²⁷ Article 29 Working Party was the EU's independent advisory body on data protection and privacy, established under article 29 of Directive 95/46/EC. It has now been replaced by the European Data Protection Board (EDPB).

²⁸ [Guidelines on Automated individual decision-making and Profiling for the purposes of Regulation 2016/679](#), EDPB (2018).

²⁹ Article 20 of the GDPR.

Title V includes the figures of data controller and data processor and the regime applicable to them, which, in the same way as the GDPR, shows a change from a passive model (compliance control) to a model based on active responsibility. This implies that their liability regime rests on the prior assessment by the data controller or data processor of the risk that could be generated by processing the personal data and adopting the appropriate measures based on such assessment.

2.2.c. Directive on Privacy and Electronic Communications (e-Privacy Directive)

Directive 2009/136/EC of the European Parliament and of the Council of November 25, 2009, amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services; Directive 2002/58/EC on the processing of personal data and the protection of privacy in the electronic communications sector; and Regulation (EC) 2006/2004 on consumer protection cooperation, known as the **e-Privacy Directive**, together with the GDPR, constitute the legal framework for privacy-related rights in the digital field, with effects on the online advertising market. This Directive, which amends regulations first introduced in 2002, regulates the use of cookies, on which collecting data necessary for the development of online advertising is based³⁰.

The Directive provides that the use of cookies is conditional on the user's consent after having been provided with clear and complete information, in particular on the purposes of data processing. The only exception are those cookies that are technically necessary for the web page to work, i.e., "technical cookies" (art. 2.5.). All other cookies, such as tracking cookies, used in the context of retargeting, analytics cookies and social media cookies, require user approval.

³⁰ The ePrivacy Directive and the GDPR are complementary regulations: the Directive introduces the specific regime applicable to cookies, while the GDPR is the general privacy framework, applicable to cookies only when they are considered personal data.

Box 2

WHAT TYPES OF COOKIES ARE THERE?

The Spanish Data Protection Agency (AEPD) classifies cookies based on several criteria: managing entity, purpose and storage time. A cookie being considered in one category or another is of great importance, given that the legal regime for obtaining consent varies in each case. The following is the classification according to the AEPD “Guide on the Use of Cookies”³¹ (in italics when quoted verbatim).

Depending on the **entity** that manages them, a distinction is made between:

- a) *Own cookies*: those that are sent to the user's device from a computer or domain managed by the publisher itself and from which the service requested by the user is provided.
- b) *Third-party cookies*: those that are sent to the user's device from a computer or domain that is not managed by the publisher but by another entity that processes the data obtained through cookies.

According to their **purpose**, they can be classified as follows:

- a) *Technical cookies*: those that enable the user to browse through a website, platform or application and use its different options or services, including those that the publisher uses to manage and operate the website and enable its functions and services, e.g., controlling traffic and data communication, identifying the session, accessing restricted-access sections or remembering the items that make up an order. Also in this category, due to their technical nature, are those cookies that allow the most effective management possible of the advertising spaces that, as another element of design or layout of the service offered to the user, the publisher has included in a web page, application or platform based on criteria such as the edited content, without collecting information from users for other purposes such as customizing that advertising content or other content.
- b) *Preference or personalization cookies*: those that enable remembering information for the user to access the service with certain characteristics that may make his or her experience different from that of other users, e.g., language, number of results to be displayed when the user performs a search, appearance or content of the service depending on the type of browser through which the user accesses the service or the region from where the user accesses the service.

³¹ “Guide on the Use of Cookies,” AEPD (2020).

- c) *Analysis or tracking cookies: those that enable the party responsible for them to track and analyse the behaviour of users of the websites to which they are linked, including counting the ad impressions. The information collected through this type of cookies is used to measure the activity of websites, applications and platforms to make improvements based on the analysis of the usage data by users of the service.*
- d) *Behavioural advertising cookies: those that store information on user behaviour obtained through continuous observation of browsing habits to obtain a specific profile to display advertising based on it.*

Depending on the **time** they remain running on the device, they can be:

- a) *Session cookies: those designed to collect and store data while the user accesses a web page. They are usually used to store information that is only of interest to provide the service requested by the user on a single occasion (e.g., a list of products purchased) and disappear at the end of the session.*
- b) *Persistent cookies: those in which the data continues to be stored in the device and can be accessed and processed for a specific period ranging from a few minutes to several years by the person responsible for the cookies.*

The Directive does not, however, indicate how these instructions are to be applied. In fact, it leaves a wide margin of application of the user consent statement to the Member States.

Since 2017, a draft Regulation on privacy and protection of personal data in the electronic communications sector (**e-Privacy Regulation**³²) has been under negotiation. It aims to specify what the GDPR generally stipulates on communications over the Internet, regulating the protection of information stored on end-users' devices.

2.2.d. Information Society Services and Electronic Commerce Act (LSSI)

As explained above, the LSSI also addresses privacy issues.

Specifically, Title III of the LSSI (arts. 19 to 22) regulates commercial communications by electronic means, the collection of personal data, the provision of information to interested parties and the creation and storage of personal data files.

³² Proposal for a Regulation of the European Parliament and of the Council concerning the respect for private life and the protection of personal data in electronic communications and repealing Directive 2002/58/EC ([Regulation on privacy and electronic communications](#)).

Article 22.2 of the LSSI is particularly important with regard to the use of "data storage and retrieval devices on recipients' equipment". This definition includes, according to the interpretation of the AEPD, cookies and similar technologies³³. Some examples are flash cookies³⁴, web beacons or bugs³⁵.

Under art. 22.2, service providers can use cookies (or similar technologies) as long as users "have given their consent after having been provided with clear and complete information on their use, in particular, on the purposes of the data processing."

As in the GDPR, the consent provided in art. 22.2. is not explicit consent but **informed consent** to ensure that users are aware their data is being used and for what purposes. In fact, the article itself provides that "where technically possible and effective, the consent of the recipient to accept the processing of the data may be provided through the use of appropriate browser settings or other applications." Finally, it states that "the foregoing shall not prevent the possible storage or access of a technical nature for the sole purpose of transmitting a communication over an electronic communications network or, to the extent strictly necessary, for the provision of an information society service expressly requested by the recipient".

The AEPD interprets art. 22 in its "Guide on the Use of Cookies," and it exempts cookies used for any of the following purposes from complying with the obligations it sets out:

- Enabling communication between the user's device and the network, and
- Strictly providing a service expressly requested by the user.

Thus, it considers that, in general, technical cookies are exempted from compliance with the obligations of article 22, as well as preference or personalization cookies if the user chooses these features.

In addition, the European Data Protection Board (EDPB), in its Opinion 4/2012, interpreted that the excepted cookies would include:

³³ Guide on the use of cookies, AEPD (2020).

³⁴ According to the AEPD, they are a type of cookie that can store much more information than traditional cookies and are more difficult to locate and delete than traditional cookies, as they are independent of the browser used.

³⁵ According to the AEPD, they are files in image format downloaded when visiting a website and which are normally unnoticeable because of their size and color. They are stored on a second site and enable the owner of that second site to record the user's visit through the information provided by the user's browser when downloading the image (e.g., IP address, operating system and browser version).

- “User-input” cookies
- Authentication cookies (or identification cookies, session cookies only);
- User centric security cookies;
- Multimedia player session cookies;
- Load balancing session cookies;
- User interface (UI) customization cookies; and
- Certain social plug-in content sharing cookies (to exchange content).

If the same cookie has more than one function with different applicable regimes (some excepted and others subject to article 22.2 LSSI), the Article 29 Working Party suggests website owners use a different cookie for each purpose. Even when a multi-purpose cookie has purposes that are not exempted from the regime in all cases, "it must be guaranteed that these cookies are only used if all their collective purposes are accepted³⁶".

Also, the LSSI does not specify who the obligated parties are in terms of the obligations set out in the regulation. The AEPD interprets that it will be the publisher and/or third parties, depending on the type of cookies used. In general, in the case of cookies not exempted from the regime of art. 22.2, publishers, advertisers, agencies and other players of the advertising ecosystem are responsible for their own cookies and those of third parties hosted on their domains when they "participate in determining the purposes and means of processing."

Box 3

HOW SHOULD COOKIES BE DISPLAYED?

The obligations imposed by the regulations on cookies policy are interpreted and developed by the AEPD in the "Guide on the Use of Cookies" and are grouped in two blocks: transparency obligations and obligations on obtaining consent.

Regarding transparency, the AEPD specifies what information must be provided and how it must be displayed.

In general, information should be included on the definition and generic function of cookies; types of cookies used and their purpose; identification of who uses cookies; information on how to accept, refuse or revoke consent for the use of cookies;

³⁶ Guide on the Use of Cookies, AEPD (2020).

information, where appropriate, on data the publisher's transfers to third countries, among others.

Regarding the way in which information should be displayed, it stresses the obligation that the information or communication should be concise, transparent and intelligible, easily accessible, and in clear and simple language. It also includes guidelines on presenting information in levels or layers.

The AEPD specifies the basis for obtaining informed consent. In general, it establishes that it may be obtained by means of "express formulas" (such as clicking on a section indicating "I consent," "I accept" or similar terms) or in a manner inferred from "an unequivocal action performed by the user." Specifically, it lists a number of ways to obtain informed consent:

- i. When requesting registration for a service;
- ii. During the process of web page or application configuration;
- iii. Through consent management platforms;
- iv. Before a service or application offered on the website is to be downloaded;
- v. Through a layered information format; and
- vi. Through the browser settings.

It also specifies, in light of the latest EDPB³⁷ Guidelines, that the "continue browsing" option is no longer a valid way for users to give consent, since it does not imply a decision in which consent is given unequivocally, and it prohibits "cookie walls³⁸", unless the user is previously informed and is offered an equivalent alternative to access the service without giving consent to the use of cookies³⁹.

³⁷ [Guidelines 5/2020 on consent within the meaning of Regulation \(EU\) 2016/679](#), EDPB (2020).

³⁸ This is a barrier imposed by domain owners to prevent users who do not consent to the use of all cookies installed on a website from browsing the site.

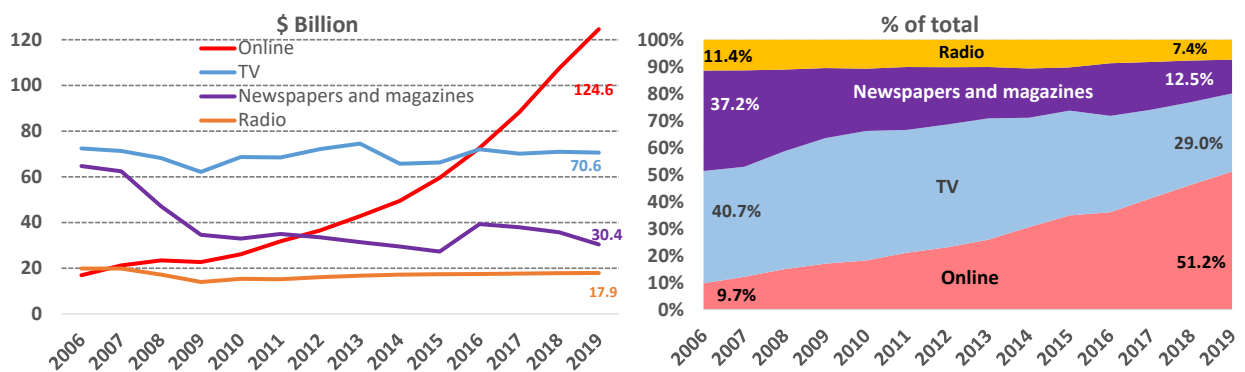
³⁹ EDPB Guidelines 5/2020.

3. Economic analysis of online advertising

Digital media advertising has been growing significantly since its inception, becoming the first advertising channel in some developed economic areas (or with the potential to becoming the first channel in the very short term), displacing more consolidated media such as television and print media.

By way of illustration, Figure 1 shows that, in the US, digital media advertising has already overtaken television and accounts for more than half of all media spending in 2019⁴⁰.

Figure 1. Evolution of media advertising in the US



Source: (IAB & PWC, 2020 and previous years).

In Europe, the evolution is similar⁴¹, although perhaps slightly slower than in the US, with different sources pointing to digital media advertising overtaking TV advertising between 2016⁴² (Grece, 2016) y 2019⁴³ (IAB Europe, 2020 and previous years).

⁴⁰ Other forms of advertising (generally less relevant) are business magazines, directories and classifieds, out-of-home, movies and video games.

⁴¹ The trends in Spain (discussed in section 4) are similar.

⁴² In a study for the EU-27, which already excludes the United Kingdom (Grece, 2016).

⁴³ In a study including 28 European countries: Austria, Belgium, Belarus, Bulgaria, Czech Republic, Croatia, Denmark, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Norway, Poland, Russia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom and Ukraine. The study includes a few countries with incomes below the EU average, that result being logical given that the adoption of online advertising is relatively lower in some European countries in this study (IAB Europe, 2020 and previous years) than in others that focus on the EU (Grece, 2016).

To better understand this growth, we will begin with an economic description of online⁴⁴ advertising in section 3.1 given that, within its overall growth, some segments are growing more than others. Next, in section 3.2, we will analyse the various forms of transactions in online advertising in terms of their different degree of intermediation, since, once again, some models are growing more than others. Subsequently, in section 3.3, we will address the specific features of online advertising that explain its greater actual and potential growth (compared to traditional media), mainly due to the role of data. Finally, in section 3.4, we will assess to what extent online advertising disruption contributes in terms of efficiency⁴⁵.

3.1. Segments and evolution of online advertising

The advertising industry has traditionally consisted of two types of players interacting with each other (IHS, 2015):

- On the **demand side**, **advertisers** (mostly companies⁴⁶) that wish to buy advertising space to target consumers⁴⁷ to boost their product sales or brand awareness and image. Many advertisers, especially the larger ones, use **agencies** to negotiate the purchase of advertising space⁴⁸ on their behalf. Agencies offer advertisers an advantage because they specialize in this task (ACCC, 2020, p. 14) and can obtain better conditions (compared to individual advertisers) thanks to the negotiating power of pooling a larger budget⁴⁹. Indirect network externalities are also generated. On the one hand, agencies with a stronger connection to different media and audiences will be more attractive to advertisers. On the other, agencies with more and better advertisers

⁴⁴ The economic description in this section has a merely descriptive approach, and the divisions made cannot be considered in any case an analysis of a relevant market definition (a task that would require a specific competition investigation analyzing the demand-side and supply-side substitutability of these segments, in addition to other considerations such as geographic delimitation).

⁴⁵ The question of the impact on competition is left for later (Chapter 5).

⁴⁶ Apart from companies, there may be other institutions (including public and non-profit entities) interested in communicating an advertising message.

⁴⁷ Apart from consumers (actual or potential), the target audience of advertising campaigns can also be citizens (in general, regardless of their role as consumers), companies (regardless of their role as customers or suppliers), public institutions, etc.

⁴⁸ In addition to providing, in some cases, creative services in campaigns. Examples of media agencies are Dentsu Aegis, Havas, WPP Group, Omnicom, Publicis and IPG.

⁴⁹ Although it is common practice for most agencies to split their budget by sub-agencies when there may be a conflict between relevant clients.

in their portfolio will be more attractive to the media when it comes to monetizing their inventory. This also creates a tendency to concentrate advertising budgets in relatively few agencies.

- On the **supply side**, **publishers** that sell advertising space because they can reach audiences and, therefore, consumers. The media, including audiovisual services (television and radio) and print media (newspapers and magazines), have traditionally been the main recipients⁵⁰ of advertising investments because of their ability to attract audiences. Once again, there are powerful indirect⁵¹ network externalities: media with larger audiences⁵² will be more attractive to agencies and advertisers (and vice-versa⁵³), which also leads to concentration on this side of the market, limited by consumer preference for variety and possible capacity constraints (which affect newspapers, due to physical and distribution costs, and TV and radio, due to the limitations of the radioelectric spectrum). This usually leads the media to subsidize their product for consumers⁵⁴, who pay little or not at all⁵⁵, so that costs of providing content are mostly borne by advertisers. However, the fact that the consumer, on many occasions, does not directly assume the appropriate monetary price does not imply that he or she does not pay through indirect channels. Firstly, since the cost is borne by advertisers, they may pass it on to consumers in the form of a higher price for the final goods and services. Secondly, consumers pay with their viewing time and attention, so that ad load can be considered a measurement of quality and a competition variable.

⁵⁰ Along with other physical spaces, such as advertising panels and directories.

⁵¹ An alternative way of stating it (Evans, 2019) is to posit that there are scope economies between selling content (to attract attention) and advertising (to monetize that attention).

⁵² Not only for their size but also for their variety.

⁵³ It is sometimes argued that network externalities are not symmetric, i.e., that consumers do not value *a priori* that a medium has access to many advertisers. However, the network externality must be valued in terms of quality (not quantity). A consumer will not value the quantity of advertisers but will value that the medium is attractive to the best advertisers for two reasons. One, because the advertising is "better" (less annoying, more inventive). And two, because the medium will be better funded to provide higher quality content and variety. Therefore, the network externality can be considered bidirectional to some extent (Petropoulos, 2016), which increases its power (the more powerful the network externality, the better the quality and variety of content) and the tendency towards concentration.

⁵⁴ Because they are more sensitive (or elastic) to possible price increases.

⁵⁵ The price can even be "negative" when consuming a medium (e.g., a newspaper) that includes gifts or bundled goods.

Figure 2 shows this advertising operation diagram out of the digital ecosystem, with advertisers contracting with publishers, either directly or indirectly through agencies.



Source: own elaboration

Digitalization implies a huge disruption. Thanks to it, content can be consumed through new devices, giving rise to (either newly created or linked to traditional media⁵⁶) digital newspapers and audiovisual services (“over-the-top”, OTT, TV and radio) via the Internet and mobile applications (apps). This makes up the so-called “**open display**,” where the supply of inventory is, as we will see below, highly intermediated (Geradin & Katsifis, 2019a).

But the most remarkable is the emergence of **digital platforms** that reach global audiences through providing services highly valued by consumers (Geradin & Katsifis, 2020b) usually free of charge⁵⁷: search services, social networks⁵⁸, audiovisual content⁵⁹ and platforms for comparison or purchase of e-commerce products (marketplaces). In addition, platforms generally take on intermediation tasks in trading their own inventory as publishers.

Therefore, **in the digital ecosystem, by publishers we mean both traditional media that have adapted to the digital area** (such as newspapers, TV and Internet radio) **and platforms**. The latter benefit from the aforementioned network externalities (the larger the

⁵⁶ A greater number of small publishers are emerging because of the lower fixed costs of the new technologies, compared to traditional media (newspapers, TV and radio channels).

⁵⁷ Again, consumers are subsidized for being the more elastic side of the transaction. Actually, consumers' willingness to pay seems even lower in digital services (Holzweber, 2017), which leads to further subsidizing the product to attract more consumers and generate more data (of great relevance in this sector). In fact, the price could even be considered negative (Evans, 2013), as it bundles and subsidizes the use of supplementary products (e.g., email, messaging and premium services), investing in improving user experience (ACCC, 2019, p. 7).

⁵⁸ Including communication services (email and messaging).

⁵⁹ Platforms creating and disseminating audiovisual content can also be considered social media, depending on their configuration.

audience, the greater the attraction of advertisers) to a greater extent than traditional media. First, because digital platforms are not subject to the capacity constraints that do affect traditional media (physical and distribution costs for newspapers and competition for the radioelectric spectrum for TV and radio). Second, because some platforms (such as social media and audiovisual content networks) have network externalities that are not only indirect (by attracting more users, they attract other players on the other side of the market, i.e., advertisers) but also direct (by attracting more users, they attract other players on the same side of the market because of, for example, the greater probability of finding contacts or better recommendations and ratings). In addition, digital platforms also exhibit greater economies of scale (because of lower marginal costs) and scope (because their model is data-driven, and data can be a common input for very diverse services). Finally, the accumulation of data plays a very relevant role in online advertising, amplifying the platforms' network effects⁶⁰ (Hagiu & Wright, 2020; Economides & Lianos, 2021).

If we set aside other smaller (and more difficult to categorize) areas, such as classified ads⁶¹ and others⁶², the **supply of advertising in digital media** can be grouped into two major segments⁶³ (Goldfarb, 2014; Beales III, 2019; Geradin & Katsifis, 2019a):

- **Search:** includes links (usually text, although increasingly richer formats are being used) that are promoted or paid for and appear alongside organic results⁶⁴ in a general search

⁶⁰ By attracting a large audience, a platform becomes more attractive not only for advertisers (indirect network economies) but also for consumers, especially for the most frequent users of the platform (Schäfer & Sapi, 2020), because knowledge about them is increased (learning economies) and algorithms for content recommendation and advertising personalization are improved. Although these data-related effects may be less intense than the traditional network effects linked to the number of players (Hagiu & Wright, 2020), the bi-directional nature of the network externality is also accentuated: an advertiser will value a platform with many users, and users will value the fact that a platform is attractive to advertisers because it will offer better (more relevant and personalized) advertising and content (Petropoulos, 2016; ACCC, 2019, p. 7).

⁶¹ The classifieds sector, less relevant in quantitative terms than search and display, comprises ads displayed on web pages and applications (such as price comparison tools) about very specific products and services (where, in general, the ads will be related to those products and services), e.g., real estate, professional services or job searches. On these specialized pages, ads can be both search and display ads, so they are considered a separate category.

⁶² Sometimes, this third category is defined residually and includes other formats that are difficult to fit under search or display such as email advertising, affiliate marketing (lead generation) or digital audio advertising (Goldfarb & Tucker, 2011).

⁶³ The description of the European Commission (DGCOMP) case M.4731 Google/DoubleClick (¶ 11) can also be read. Some questions about the complexity of these markets are expanded upon in section 5.1.

⁶⁴ Organic results are provided by the algorithm by relevance criteria (independent of advertising). Ads appear above, below or to the side (Geradin & Katsifis, 2019a).

engine⁶⁵ such as Google or Bing (including search bars embedded in general pages such as those of a digital newspaper). Advertisers "bid" for their ads to appear when search engine users search for certain keywords, i.e., they pay for their ads to appear in a certain context. But they also bid for their ads to be visible to users that have certain characteristics (a certain age, in a certain location, with certain interests inferred from their previous online behaviour), i.e., according to the ability to personalize and adapt to the target audience. However, the first variable is more relevant: search advertising is, in essence, contextual and is displayed according to the keywords targeted by the search (which determine the context and layout of the device's screen, without prejudice to the possibility of personalizing and adapting it according to the user at any time). Thus, search advertising is displayed to people who already show some interest in the product (in the jargon, they are known as the "in-market") and the advertising action is expected to produce a certain "conversion" (CMA, 2020, pp. 217-218), i.e., that the ad leads to purchases, clicks, website registrations, etc.

- **Display:** these are ads that appear while browsing on a web page or mobile app (Bitton, Pearl, Dolmans, & Mostyn, 2019) in different formats⁶⁶: social media, video⁶⁷, banners, images and rich media⁶⁸, native advertising⁶⁹, branded content⁷⁰ or even text links. As can be seen in Figure 3, in this area there are ads both in traditional publishers that have migrated to the online environment (such as a digital newspaper, in what is called open display) and in platforms. Advertisers bid for ads on different pages or applications based on content (i.e., according to the context) and also based on the characteristics that can be learned or inferred from the user (i.e., according to the ability to personalize and adapt to the target audience). Display advertising, having more formats and presence in more media, is richer than search advertising, and we find purely contextual

⁶⁵ Advertisements in vertical search engines specialized in very specific sectors (such as hotels, flights, etc.) are usually excluded due to the specific characteristics of these search engines for advertisers and consumers (which leads to including them in that third segment classifieds).

⁶⁶ This format ordering may reflect approximately and indicatively their current relevance in terms of their share of total display investment (IAB UK, 2020; IAB & PWC, 2020 and previous years).

⁶⁷ In particular, the technical specificities of video could lead to it being considered a sub-segment different from the other display formats (CMA, 2020, p. 218;244).

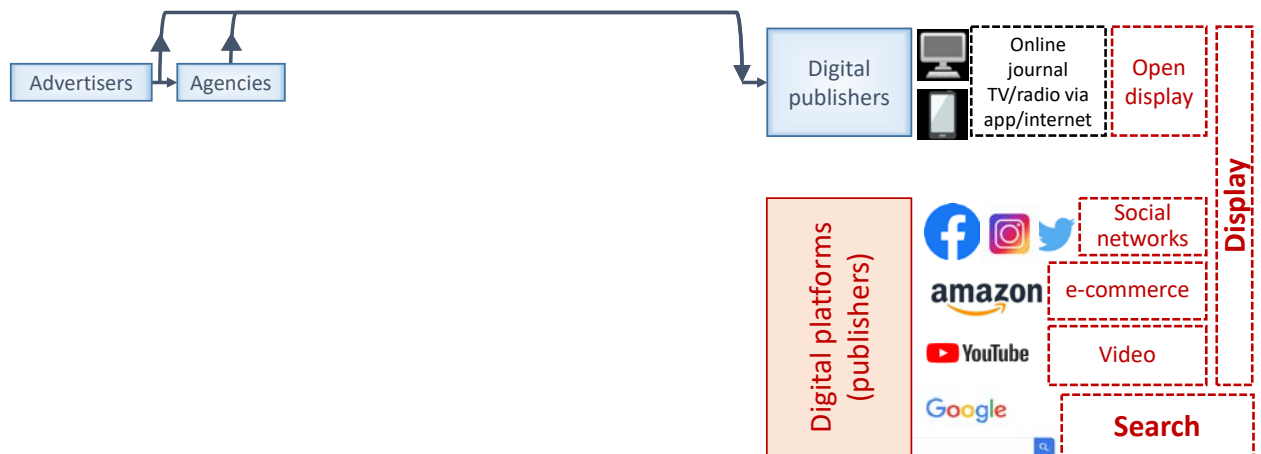
⁶⁸ Advertising with a diversity of formats that generates some type of interaction with the user.

⁶⁹ Advertising that is naturally inserted into the context in which it is displayed and gives the appearance of content, even if it is labeled as promoted content.

⁷⁰ Advertising that consists of generating content around a brand (without being linked to specific products) to try to improve its image and awareness in a non-invasive way.

advertising (displayed according to the content of the app or web page) and purely targeted advertising (displayed by type of user, regardless of the content of the application or web page). In terms of purpose, display advertising seeks to reinforce brand image or product awareness for consumers in general (out-of-market), although it increasingly seeks to generate a specific response⁷¹, taking advantage of the degree of user knowledge achieved⁷² (CMA, 2020, pp. 217-218).

Figure 3. Advertising in digital media



Source: own elaboration

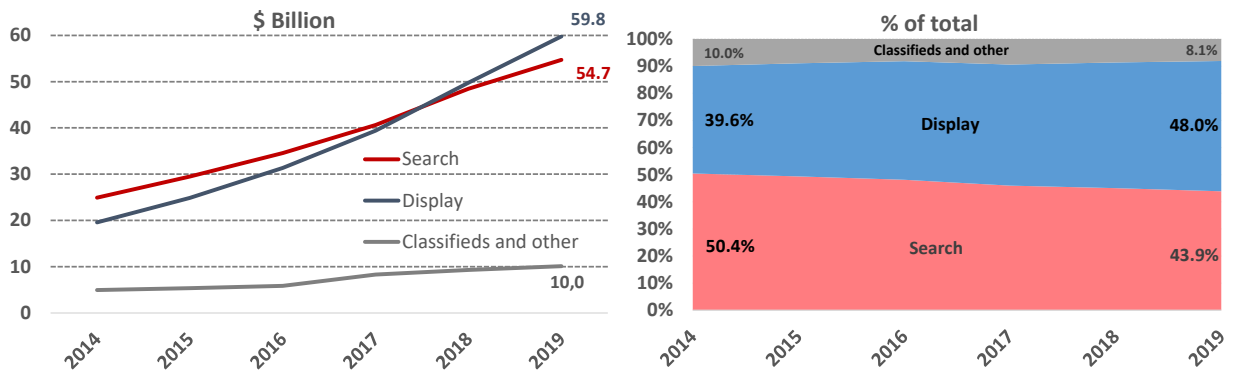
This greater diversity of display advertising formats and its increasing versatility (to reconcile image and brand awareness with conversion objectives) explain its greater dynamism compared to search advertising (AdIC, 2018, p. 16) especially in the last three

⁷¹ As we will explain below, there is a type of personalized advertising (behavioural advertising) based on the consumer's behaviour on the web (pages visited, time, clicks, etc.) that makes it possible to estimate their interests (supplemented by other inferred or known characteristics such as sociodemographic variables or location). An extreme case of this type of advertising is retargeting, where the same ad is shown (regardless of the context or type of page) to the consumer of a product in which he or she has already shown interest, expecting him/her to complete the purchase.

⁷² Platforms such as Facebook or Amazon, because of their huge audience and their configuration, can estimate consumer interests very well, so their display advertising can also be competitive to look for direct conversion actions.

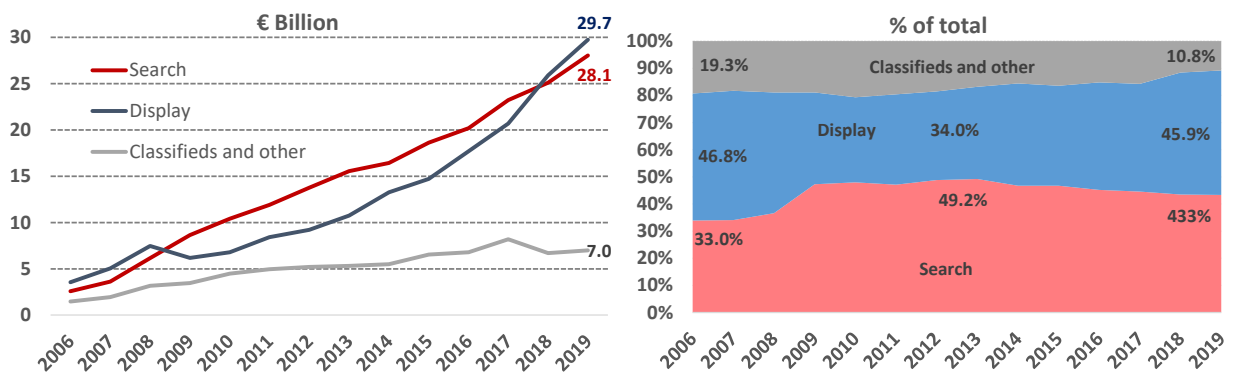
to five years. Display, with shares above search since 2017, is already close to 50% of the online advertising market in the US⁷³ (Figure 4) and Europe⁷⁴ (Figure 5).

Figure 4. Evolution of the different online advertising segments in the US



Source: (IAB & PWC, 2020 and previous years).

Figure 5. Evolution of the different online advertising segments in Europe



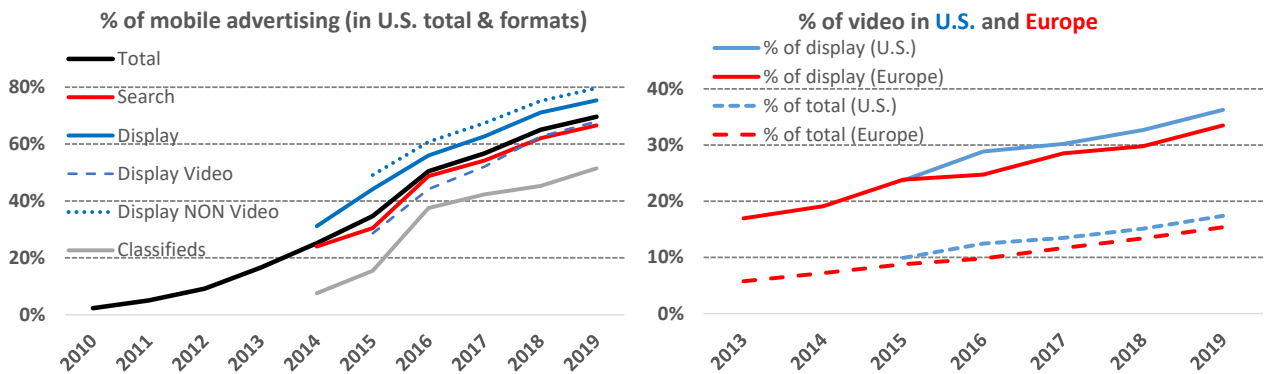
Source: (IAB Europe, 2020 and previous years).

⁷³ In other geographical areas, such as Australia, display advertising (while still growing ahead of search) has not yet managed to unseat search and remains at 37% of total revenue (ACCC, 2020, p. 8). In the UK (CMA, 2020), it is also estimated that search advertising (at £7.3 billion) is outperforming display advertising (at £5.5 billion).

⁷⁴ In Spain, display advertising is also estimated to have a higher volume than search advertising (as we will see in Chapter 4).

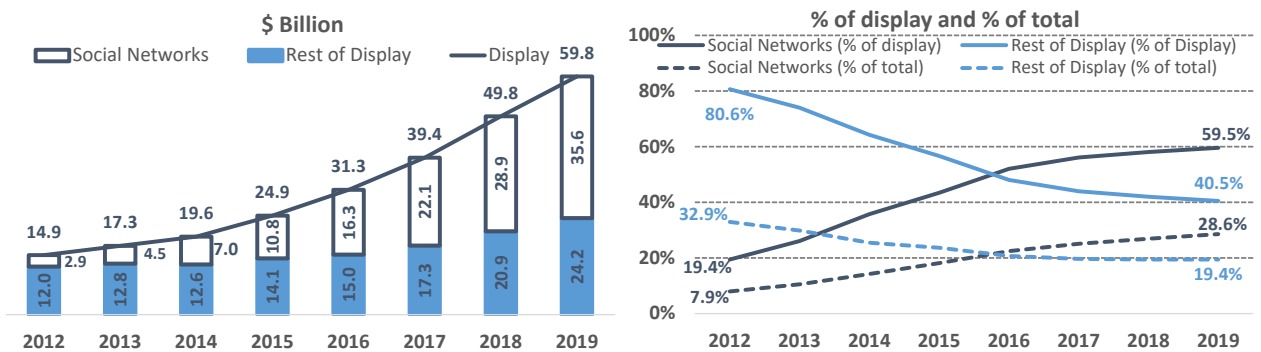
The growth of display advertising (AdIC, 2018, pp. 3;16-17), as Figure 6 shows, is strongly linked to mobile⁷⁵ devices (whose ads, from being testimonial in 2010, have reached 70% of the market in the US) and to formats such as video (which is on track to reach 40% of display in the US and Europe and 20% of the total). It also relies heavily on social media development, especially in the US (where they comfortably exceed 50% of display in the US market as shown in Figure 7) but also in Europe (where they are close to 50%, as shown in Figure 8).

Figure 6. Share of advertising on mobile devices and video format



Source: (IAB & PWC, 2020 and previous years; IAB Europe, 2020 and previous years; IAB Europe, 2020)

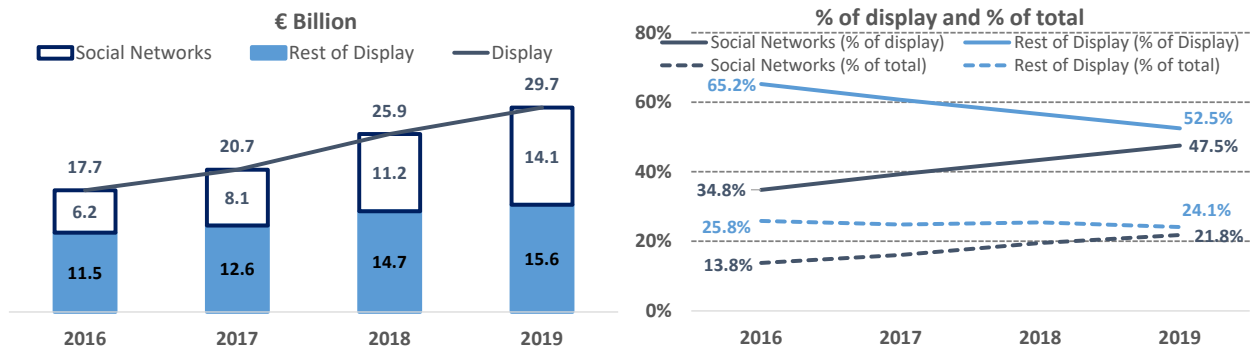
Figure 7. Advertising on social media in the US



Source: (IAB & PWC, 2020 and previous years)

⁷⁵ Includes smartphones and tablets.

Figure 8. Advertising on social media in Europe



Source: (IAB Europe, 2020 and previous years)

3.2. Forms of transactions in online advertising: the role of intermediaries

Digitization of advertising has not only altered the type of players involved in the supply and demand sides, but it has also allowed new forms of contracting to emerge (in comparison with the non-digital environment). This has given **rise to new business models and new players dedicated to intermediation**.

Figure 9 shows the intermediaries operating in **open display**, which includes publishers without a global audience (although they do have significant presence at a national level), such as print media and digital (OTT, over-the-top) radio/TV. In open display, the negotiation of the purchase and sale of advertising space is highly intermediated.

First, advertisers and agencies maintain, just as in the offline world, the ability⁷⁶ to contract bilaterally with publishers (CMA, 2020, p. M13). Direct agreements (known as IOs, insertion orders) are used by large advertisers, agencies and publishers for high visibility inventory (with higher demand⁷⁷). But even in this more traditional way of contracting, new intermediaries are needed. It is the case of **servers**, which are a necessary tool to ensure ad placement in digital spaces, especially when the complexity and volume of transactions require automation and real-time response⁷⁸ (Bitton, Pearl, Dolmans, & Mostyn, 2019)

⁷⁶ As the blue arrow at the top of Figure 9 shows, which is the same as in Figure 2

⁷⁷ Therefore, direct trading generally results in higher revenue per impression than programmatic selling (which we will discuss later). See *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet* (¶ 270).

⁷⁸ In other words, servers are not strictly necessary just in the case of static and very *ad hoc* campaigns (and it is not possible to track ad performance when they are not used).

Advertiser ad servers⁷⁹ (**AAS**) manage advertising campaigns and store ad placement orders in a repository. **Publisher ad servers**⁸⁰ (**PAS**) manage the inventory of advertising space⁸¹ and connect⁸² to the AAS when the arranged conditions⁸³ are met (either in direct negotiation or in the ways we will see below, such as platform auctions⁸⁴), and the bids received can be ordered with header bidding⁸⁵ systems. Both servers can also track ad performance⁸⁶, thus covering part of the functions traditionally assumed by agencies.

⁷⁹ They are also called third-party ad servers because the data they obtain from connecting to the publisher's server is not first-hand but depends on the publisher's site or app. Examples of advertiser ad servers are Google (with its Campaign Manager product), Adform, Sizmek (owned by Amazon), Weborama, Innovid and Flashtalking.

⁸⁰ They are also called first-party ad servers because they get the data from browsing on their property, which increases data quality and their power over the data. Examples of publisher ad servers are Google, Smart AdServer, Freewheel and Xandr (which is owned by AT&T and has bought AppNexus).

⁸¹ Except for platforms with a global audience, this service is usually outsourced to a third party. See European Commission (DGCOMP) case M.4731 Google/DoubleClick (¶ 21 & 176-178) and *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet* (¶ 44).

⁸² The dotted red lines in Figure 9. This is a process with no apparent interoperability problems. See European Commission (DGCOMP) case M.4731 Google/DoubleClick (¶ 30).

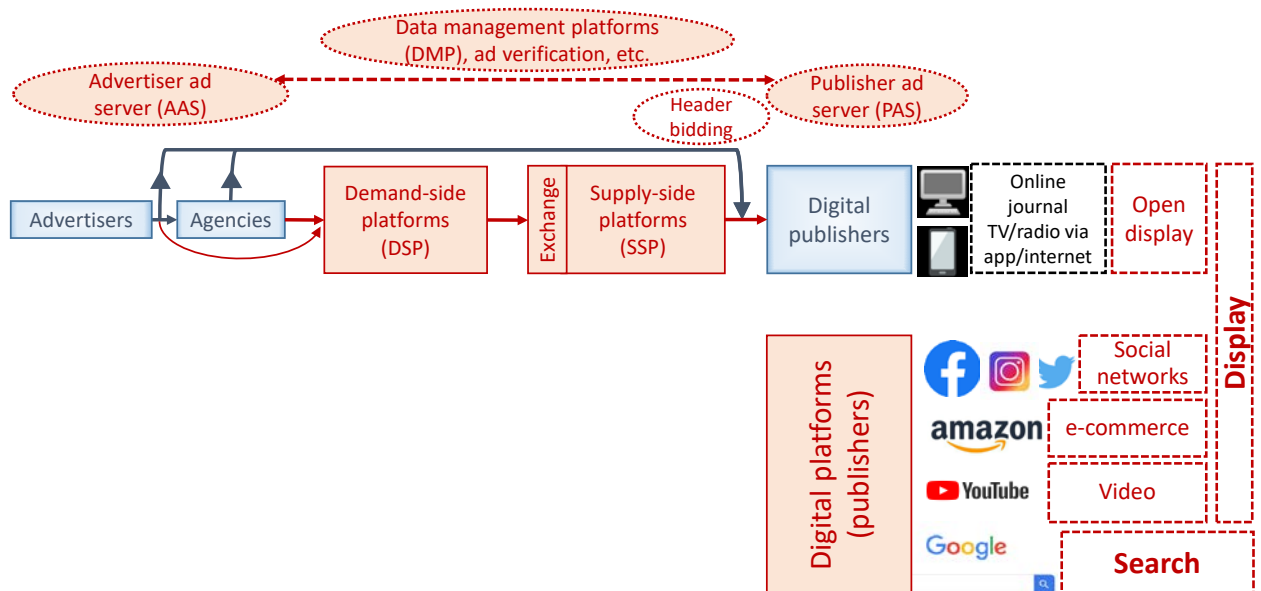
⁸³ Ad placement, price, characteristics of the target audience, etc.

⁸⁴ Therefore, a publisher ad server allows selling ads by direct advertiser campaigns or by programmatic sales (discussed below) and choosing the most profitable demand source. The choice of server is, therefore, determined by its access and connection to demand and by technical aspects (such as format compatibility). See *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet* (¶ 40, 41, 43).

⁸⁵ The header bidding system connects to the different demand sources and selects the best offer for the publisher. This technology is provided by companies such as Amazon or Index Exchange. Google offers a similar open-bidding service.

⁸⁶ For example, performance in terms of clicks or interactions, which is important for determining remuneration or managing changes in real time if needed.

Figure 9. Online advertising intermediation in open display



Source own elaboration (Bitton, Pearl, Dolmans, & Mostyn, 2019; Geradin & Katsifis, 2019a)

Note: the blue arrow represents direct agreements between advertisers and publishers. The continuous red arrows show the relationships of the two sides of the market with intermediaries. The dotted red arrow represents communications between servers.

But the technological complexity and the potential volume of transactions offered by online advertising means that this direct negotiation between agencies/advertisers and publishers does not always meet their optimization needs (optimization of investment in the case of agencies/advertisers and optimization of inventory in the case of publishers). In other words, even large advertisers/agencies and publishers are increasingly turning to other intermediaries (Kemp, 2020; Scott Morton & Dinielli, 2020). These agents comprise the **ad tech sector** of the so-called “programmatic technology”:

- **Demand-Side Platforms⁸⁷ (DSPs):** they bring together campaigns from different advertisers and agencies⁸⁸ and manage, in exchange for a fee⁸⁹, their purchase of advertising space, optimizing between different media, according to their campaign objectives (e.g., target audience, media⁹⁰, dates, location) and price, looking for the most efficient placements (impressions). However, DSPs do not connect directly to the media but use exchange platforms (ad exchanges, analysed below), where the spaces offered by a multitude of publishers converge. Advertisers (with a certain volume of budget/transactions) and agencies can connect to the different DSPs. Agencies can use internal or external⁹¹ Trading Desks⁹² to optimize their investments⁹³.
- **Supply-Side Platforms (SSPs⁹⁴ and Exchanges):** they bring together the space supply from different publishers and allow them, in exchange for a fee⁹⁵, to optimize

⁸⁷ Examples of DSPs include Google (with its Display & Video 360 product, DV360), The TradeDesk, Amazon (which was already in the market but also bought Sizmek), Mediamath, Adobe Systems (with Tubemogul), Xandr (which is owned by AT&T and had bought AppNexus), TapTap (with Sonata), Amobee (buyer of Turn and Videology) or Adform. Criteo (specialized in retargeting) and the Facebook Audience Network (FAN, where Facebook offers access to third-party publishers' inventory, generally mobile) can be considered DSPs, although they could also be considered on the SSP side because of their direct connection with publishers.

⁸⁸ Although it is usually the agencies that contract the DSP (for reasons of efficiency, specialization, lower transaction costs and greater possibility of obtaining better conditions and volume discounts), there are also advertisers (generally of very considerable volume and with a transnational presence) that contract the DSP on their own (as shown by the curved red arrow in Figure 9) for various factors such as greater control over their investment and, especially, over the data generated (CMA, 2020, pp. M18-M19).

⁸⁹ This commission may vary, apart from quality aspects of the platform (such as its degree of connection with the other side of the market, exchanges/SSPs, or the enrichment of transactions with data), by the volume of spending of the agency or advertiser or added services that the platform may provide.

⁹⁰ Brand safety criteria to ensure that the quality of the media where the ad will appear is satisfactory for the brand.

⁹¹ Examples are Business Mind (BMind) and Target Connection (Targetopia).

⁹² They are operators that provide the technical execution of purchasing campaigns in the DSPs.

⁹³ There are also meta DSPs that optimize investment by combining with a single tool the connection to multiple DSPs in search of the best opportunities. An example of a meta DSP is AdGravity.

⁹⁴ Examples of SSPs/exchanges include Google (AdExchange, AdX), Xandr (which is owned by AT&T and had bought AppNexus), Magnite (formerly Rubicon Project and Telaria), PubMatic, Index Exchange, OpenX, Freewheel, Rich Audience, Smart Ad Server or Verizon. SSPs specializing in certain formats (Teads, SpotX, Adman) are also often included. In addition, some consider Criteo (specialized in retargeting) and Facebook (for its Facebook Audience FAN) as SSPs, although they are not, strictly speaking, SSPs.

⁹⁵ This fee may vary, apart from the quality of the platform (e.g., its degree of connection with the demand on the other side of the market, coming from DSPs, or enriching the transaction with data), by the type of transaction: there are open auctions, where the SSP/exchange charges a higher fee, and marketplaces

their inventory in search of an offer that maximizes their revenue within certain quality criteria⁹⁶. Matching transactions between DSPs and SSPs in real time (RTB, Real-Time Bidding) requires the use of programmatic technology (which we will explain later). Initially, this matching between demand and supply was done in independent intermediary platforms (ad exchanges), but this task is now being assumed directly by the SSPs in most cases⁹⁷ (Kemp, 2020). SSPs/exchanges, therefore, reduce transaction costs for publishers when looking for a counterparty. Another option for publishers to trade their space are ad networks⁹⁸ (not represented in Figure 9), which usually, in exchange for a fee⁹⁹, manage the sale of space on their own (packaging it with inventory from other publishers to reduce transaction costs).

- **Other players:** data management platforms (DMPs¹⁰⁰) that work on the accumulation of data and its exploitation and analysis stand out. They are very useful for DSPs, because they allow them to modulate their bids according to how they adapt to their target audience, and for SSPs, because they help to optimize their inventory (knowing what their potential demand may be) and enrich the offer they provide to the other side of the market (with information about their audience). Therefore, many DSPs and SSPs

(PMPs, private marketplaces) or private deals (deals or PGTs, Programmatic Guaranteed Transactions) where the fee is lower because the intermediary's work is lower, and the parties (agency/advertiser and publisher) still have a significant workload.

⁹⁶ Again, brand safety criteria to ensure the integrity or relevance of the ad.

⁹⁷ See Decision of the Competition Authority n° 21-D-11 of 7 June 2021 on practices implemented in the Internet advertising sector (¶ 56).

⁹⁸ Google would be the main example of an ad network geared towards small publishers in inventory on fixed devices (with its AdSense product) or mobile devices (with its AdMob product). There are other networks that also connect advertisers with smaller or larger publishers such as Smartclip, SunMedia and Seedtag. Other players that are often considered ad networks are the native advertising specialists Taboola and Outbrain (because of the specificity of their format). See *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet* (¶ 52-54).

⁹⁹ Since *ad networks* manage inventory on their own, their fee is usually higher than that of SSPs (see *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet*, ¶ 61), although the publisher may be better off (especially if it is a small or medium-sized publisher and/or has a small demand for its inventory) since ad networks entail a smaller workload. Even for larger publishers, ad networks may offer a comparative advantage in managing certain types of inventory: i) complex formats that are hard to manage and ii) trading inventory for a different geographic area such as the Americas in the case of Spanish media. However, for the inventory of medium-large publishers without these characteristics, the use of SSPs is typically prioritised over Ad Networks.

¹⁰⁰ Platforms that offer access to their own inventory or offer DSP services often include an integrated DMP.

internalize these DMP services. Finally, there are services for measuring, attributing and verifying¹⁰¹ audiences and impressions (Kemp, 2020), which are useful for estimating the effectiveness of campaigns.

In terms of **platforms advertising inventory**, as Figure 10 shows, platforms with a large global audience can internalize these tasks and do not need to rely on third parties for intermediation (AdIC, 2018, p. 5):

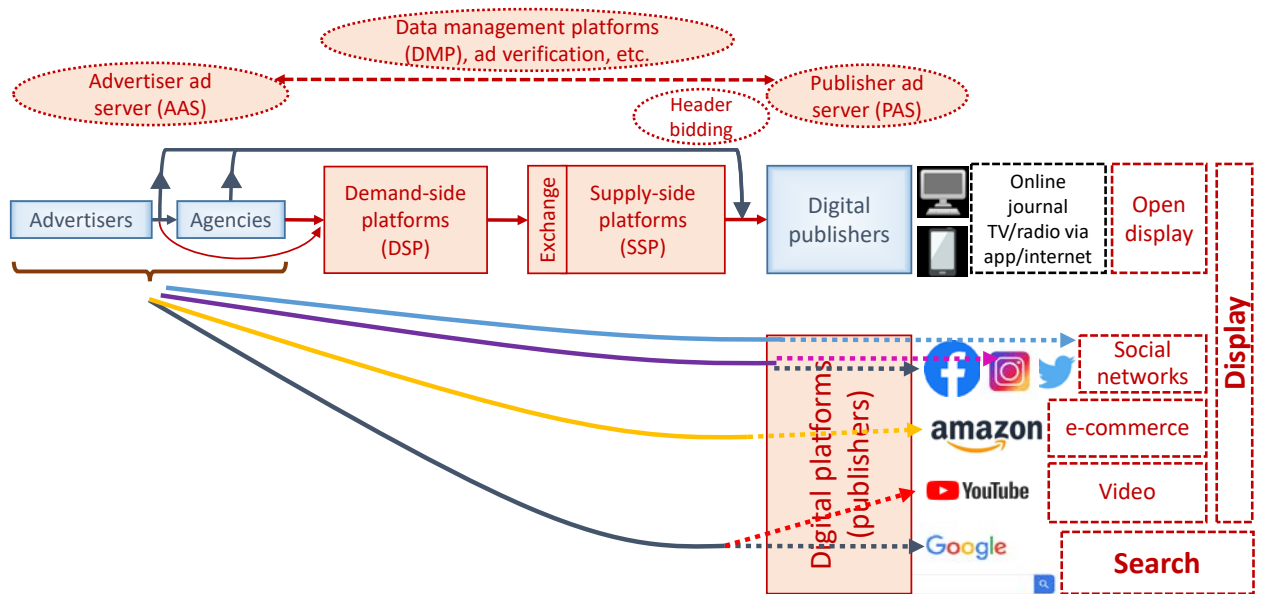
- As publishers, they can internalize their PAS server tasks because their scale allows them to do so.
- For their advertisers or agencies, they create an ecosystem that allows them to act as an AAS server, with which they can track performance indicators and have tools to design, store and insert ads, plus auction spaces via DSP. In general¹⁰², their inventory is only accessible through their own DSP, so they do not use other SSPs/exchanges, although with their DSP, platforms can indeed access ad exchanges and third-party ad inventory (which generates debates about their impact on competition, as will be discussed later¹⁰³).
- Finally, the proximity to consumers and their granularity in data collection (particularly in companies such as Google but also Facebook and Amazon) allows them to enrich their supply of advertising space with useful data to personalize and analyse campaigns and inventory (integrated DMP services).

¹⁰¹Examples of verification tools are Integral AdScience (IAS) and DoubleVerify. An example of a measurement tool is comScore.

¹⁰²With the occasional exception of platforms with a rather medium-sized audience (such as Yahoo or Tumblr), which do connect their inventory to intermediaries outside the platform (CMA, 2020, p. C57).

¹⁰³In Chapter 5 on competition issues.

Figure 10. Contracting advertising in platforms



Source: own elaboration (Bitton, Pearl, Dolmans, & Mostyn, 2019; Geradin & Katsifis, 2019a).

Note: the lower arrows show how platforms do not need intermediaries to market their inventory, unlike publishers in open display.

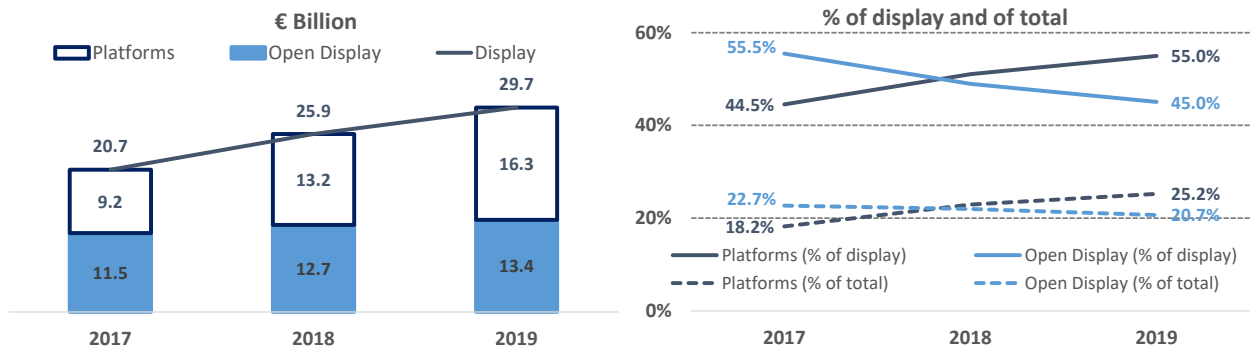
Revenues associated with platforms' own inventory are growing faster than revenues from publishers that use intermediaries (either through pure programmatic open display or through traditional agreements between publishers and advertisers or agencies), as shown in Figure 11 for Europe¹⁰⁴. In other words, the increase in online advertising revenues is reaching platforms in particular, which are capturing a growing share of display¹⁰⁵ and are also key players in search¹⁰⁶ (where a platform such as Google holds almost the entire market, as we will review in Chapter 4).

¹⁰⁴ Something similar seems to be happening in Spain (as we explain in Chapter 4), in line with other studies (CMA, 2020, p. C60).

¹⁰⁵ This was a trend that was already inferred from the ideas mentioned above, such as the rise of social networks. In fact, most of the platforms' revenues in display (€16.3 billion in Europe in 2019, according to Figure 11) are for social network (€14.1 billion, according to Figure 8). An example of a platform not included in social networks is Amazon (because YouTube or Spotify are usually also considered social networks).

¹⁰⁶ Platforms are prominent in the third segment of classifieds too. This includes email, where Google is also preponderant. And price comparison tools and specialized search engines within the classifieds area also follow the platform model in many cases.

Figure 11. Market share of platforms in advertising and open display



Source: (IAB Europe, 2020 and previous years; IAB Europe, 2020).

This poses a challenge for traditional publishers (newspapers, TV and radio) that have partially migrated to digital media, since their online advertising revenue is growing, although to a lesser extent than those of the rest of the sector. This increase may not compensate for the loss of revenue from their traditional (non-digital) main source of advertising in audiovisual media (shown in Figure 1).

This new advertising framework is even more disruptive, since some of these **platforms are also engaged in intermediation of third-party inventory**, including that of those same traditional publishers (in open display) (AdIC, 2018, p. 6; ACCC, 2019, p. 7). As Figure 12 shows, Google's presence in all stages of the value chain is particularly noteworthy, although, as Figure 13 shows, Amazon and, to a lesser extent, Facebook, are also present¹⁰⁷:

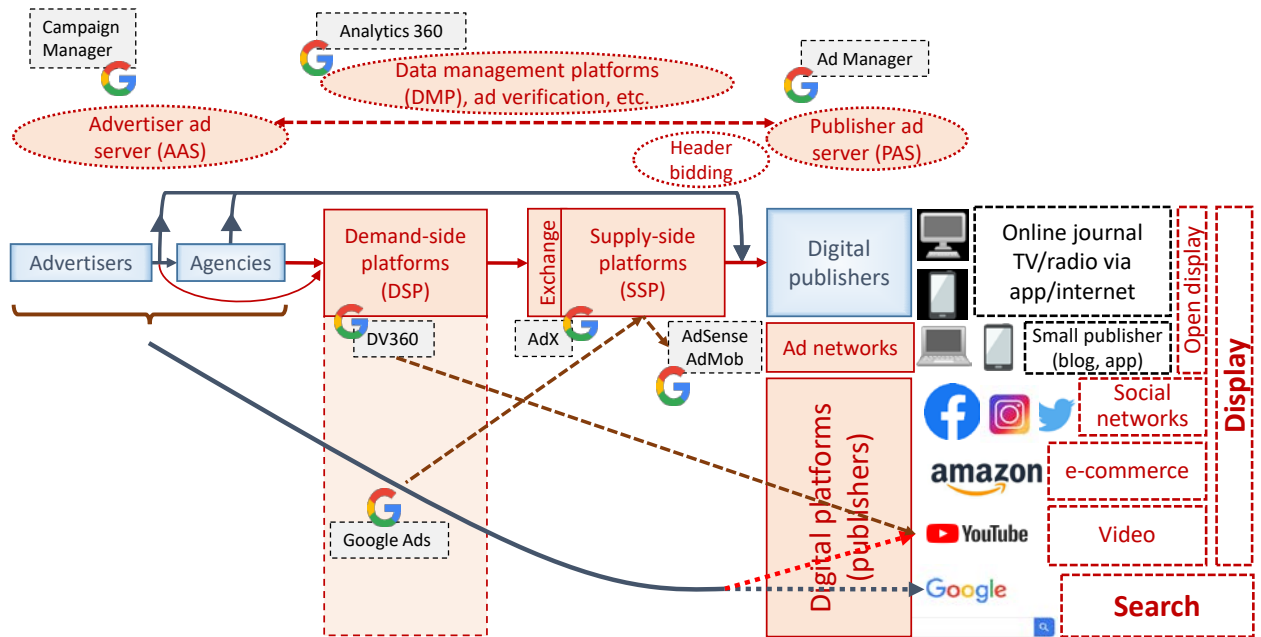
- On the demand side, Google has an ad buying tool called Google Ads¹⁰⁸ and a DSP (DV360), in addition to an AAS (Campaign Manager, which can be integrated with DV 360). On the supply side, Google offers a PAS (Ad Manager) that can be integrated or not with its SSP/exchange (Ad Exchange, AdX) and includes an open bidding solution

¹⁰⁷ All three offer analytics and data management services (DMP) as part of their portfolio of services to advertisers and agencies (AAS and DSP).

¹⁰⁸ Google Ads combines (uniquely in the market) access to its own ad inventory (Google Search, Gmail and YouTube) and third-party inventory connected to the Google Display Network (GDN). It is not purely a DSP, but it could be considered as such (CMA, 2020, p. 266). It is geared towards small advertisers, although it is also used by agencies and larger advertisers (precisely because it is the only gateway to search inventory).

(similar to header bidding). Google also acts as an ad network for lower demand inventory on fixed (AdSense) and mobile (AdMob) devices.

Figure 12. The role of Google in ad tech intermediation

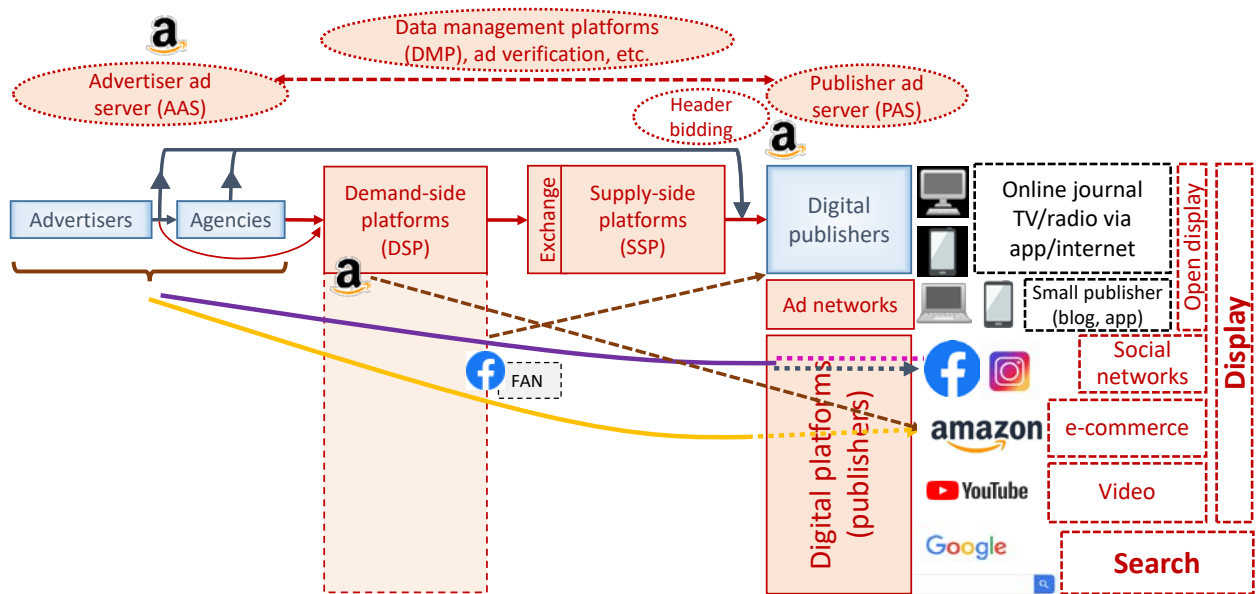


Source: own elaboration

Note: brown arrows show how Google's tools combine access to its own inventory and access to third-party inventory in the open display.

- On the demand side, Amazon has a DSP and an AAS (following the acquisition of Sizmek). On the supply side, it offers a header bidding solution.
- Facebook offers a hybrid product connecting demand and supply with its Facebook Audience Network (FAN) that allows bidding (by submitting bids on its server) for publisher inventory (generally in mobile applications).

Figure 13. The role of Amazon and Facebook in ad tech intermediation



Source: own elaboration

Note: brown arrows show how the Amazon and Facebook tools combine access to their inventory and access to third-party inventory in open display.

The fact that the same platforms, so successful in attracting audiences and monetizing their own inventory, are competitive in intermediation for third parties best exemplifies the disruption that online advertising has caused. The fact is that both dynamics feed each other. Platform proximity to the end user, attracting large audiences as publishers (Bitton, Pearl, Dolmans, & Mostyn, 2019; AdIC, 2018, p. 6), allows them to accumulate more data and improve their competitiveness in ad placement, not only in their own inventory but also as intermediaries in third-party inventory. However, their competitiveness in intermediation could also be due to other issues (which we will analyse in Chapter 5) such as exclusive access to their inventory (Geradin & Katsifis, 2020b; CMA, 2020, pp. 279-280; M72; ACCC, 2021, pp. 13-15) or the acquisition of intermediaries (AdIC, 2018, pp. 48-49; 91; ACCC, 2019, p. 8; CMA, 2020, p. 279; Scott Morton & Dinielli, 2020; ACCC, 2020, p. 21; ACCC, 2021, p. 13).

This is a source of added pressure on traditional publishers, leading them to reduce their commercial margin in two ways. Not only are they less competitive than platforms in monetizing their own inventory (because platforms have a larger audience and more data to personalize). It should be born in mind that some of these platforms also assume the

intermediation of other publishers' own space. And this can also affect agencies, lowering their intermediation margins or passing on costs to advertisers.

These changes affect efficiency and competition in ways that we will explain in detail later. But first, we will analyse the specific features of online advertising that explain its dynamics, both its absolute growth and the relative development of its different components: greater dynamism of platforms compared to traditional publishers and of display compared to search.

3.3. Specific features of online advertising: the role of data

Online advertising has greater actual and potential growth than non-digital advertising and has meant a real industry disruption and transformation due to multiple factors. We will try to systematize them in three interconnected aspects: the **ability to personalize**, the **possibility of measurement** (AdIC, 2018, p. 8) and the use of **new programmatic technological tools** for transaction matching.

All these factors underline the **importance of accumulating and exploiting data on audiences and transactions**. Data becomes the main competitive variable. That is why players try to track the same user on different websites or apps. On fixed devices, for example, cookies can be used¹⁰⁹ (Kemp, 2020). A cookie is a text file inserted in the user's browser, which acts as an anonymous identifier. On mobile, device identifiers (Kemp, 2020) or the IP address (which also works on fixed devices) are used.

This user tracking makes it possible to accumulate data from various sources:

- **First-party data**, i.e., data accumulated directly through the following channels:
 - Data generated by users' browsing in our own inventory: e.g., pages visited, reactions to content or ads, clicks and time spent browsing. This is a source of data accumulation (Geradin & Katsifis, 2020a) for traditional publishers (and their servers) and, especially, for platforms with large global audiences (with a multitude of interactions on social networks or search engine searches) to build user profiles (e.g., through first-party cookies). Technically, advertisers can also collect data this way from users' browsing on their own websites or apps, although it is less relevant¹¹⁰.

¹⁰⁹ See section 2.2 for an extended description.

¹¹⁰ Obviously, as these have smaller audiences than platforms or publishers, advertisers accumulate less data this way, forcing them to resort to third-party data.

- Data disclosed directly by users who have registered (logged in) on a platform or on a publisher's or advertiser's website or app. Again, platforms (AdIC, 2018, p. 6) are more capable of capturing information this way¹¹¹, because their larger audience generates more willingness to disclose data in the login¹¹² process. Data can include, with a greater or lesser degree of truthfulness, sociodemographic variables (e.g., name, gender and age), address and other contact data and interests. These data are useful *per se*, but also because they can be matched with the data produced by cookies, increasing user knowledge, (Geradin & Katsifis, 2020b) specifically of those about whom we have first-party information.
- Accumulation of data beyond their own inventory (ACCC, 2019, p. 7) for example, from users' browsing within the platform (access to URLs in Facebook or Twitter apps/webs), installation of certain components (such as plug-ins to interact directly with the platform), certain browsers or devices (such as Chrome or Android¹¹³ in the case of Google), or when the session remains logged in on different devices¹¹⁴ (CMA, 2020, pp. G76-G77;M76). In this third channel of accumulating data, platforms have an even greater advantage in data accumulation (compared to other players), given their use of envelopment and ecosystem strategies, which allows them to retain users in their properties by integrating multiple services.
- Other contextual data, such as content, device (CMA, 2019, p. 41), date, time, location, etc. that can be considered first-party and help enrich user profiles, especially by improving inference capabilities.
- **Third-party data**, i.e., data accumulated indirectly, typically by installing cookies or code on third-party websites or apps (CMA, 2020, p. G25;G35). This allows access to information such as IP address, GPS location, date and time, device information and interaction indicators such as impressions or clicks (CMA, 2020, pp. G76-G77). The

¹¹¹This has led traditional publishers to strengthen the practice of "registration walls" i.e., "forcing/inviting/incentivizing" users to register and log in to the web or app to be able to access content and thus refine their first-party database (Kemp, 2020).

¹¹²As mentioned above, some platforms, such as social networks or audiovisual content platforms, have direct network externalities: the larger the audience, the greater the attraction of users on the same side of the market (due to the greater likelihood of finding known contacts or recommendations).

¹¹³Especially for geolocation data but also device usage data or installed apps (CMA, 2020, p. M77).

¹¹⁴Revealing geolocation or IP address data, which is very useful for targeted advertising but also for refining user profiles (CMA, 2020, p. M73).

goal is to track the same user behaviour across different websites and apps¹¹⁵ Access to databases can also be obtained by offering analysis and management services (DMP) or related services (such as advertiser ad servers) (CMA, 2020, p. G78). Therefore, companies that are engaged in online advertising intermediation in the open display segment have the potential to accumulate data. This includes specifically dedicated intermediaries but also platforms (ACCC, 2019, p. 7) operating in this field such as Google and, to a much lesser extent, Amazon and Facebook. Advertisers and agencies, finding it more difficult to capture first-party data, also resort to third-party data.

The most relevant aspect of this combination of data accumulation sources¹¹⁶ is their complementary nature:

- First-party data allow access to deterministic information that is useful *per se* and also because it enables to try to predict interests or behaviours of other similar agents for which we do not have such complete information¹¹⁷ (random variables), perhaps because the data about them are third-party data.
- Aggregation of data sources is not perfect (Geradin & Katsifis, 2020a; CMA, 2020, pp. G71-G72; M34-M35) and there are cookie matching¹¹⁸ or cookie syncing problems that can affect 30% to 40% of the data. Companies with granularity in the simultaneous accumulation of first-party and third-party data and vertically integrated along the value chain will minimize these losses.

These factors benefit players that accumulate first-party data and platforms with a certain degree of vertical integration or that combine selling their own space with intermediation of third-party inventory. And these dynamics may be accentuated if the industry's move

¹¹⁵ That is why third-party cookies are also called tracking or targeting cookies.

¹¹⁶ There is an intermediate form of data accumulation called second-party data, which is accumulated indirectly from third-party sites (i.e., essentially third-party data), although with quality mechanisms that improve synchronization with their own data (therefore, approaching the quality of first-party data). An example would be sharing data ("data partnerships" or "data pools") in a relatively stable manner to improve user tracking beyond their own inventory, a practice that is being adopted by medium to large publishers (an example of this strategy can be found in CNMC file C/1028/19: PRISA / VOCENTO /GODÓ) to enhance their databases and increase their revenues and bargaining power against technological intermediaries that sell their advertising in open display (Kemp, 2020).

¹¹⁷ For this reason, although contextual information may be considered "obvious," including it in databases in a systematic way is useful because it can help predict other information.

¹¹⁸ Cookie matching is not only important before launching a campaign or an ad impression (to define the target audience profile) but also ongoing (to change targets if necessary or to avoid impacting the same individuals too many times) or at the end (to measure impact).

towards the end of third-party cookies is consolidated. Following the announcements by Mozilla and Apple (Safari) browsers, Google has also announced that it plans to remove third-party cookies from its Chrome browser (possibly by 2023) as part of an initiative called “privacy sandbox” (Schuch, 2020; Geradin & Katsifis, 2020a; Geradin, Katsifis, & Karanikioti, 2020a; Goel, 2021). Data accumulation may also be affected by the initiative already implemented by Apple (App Tracking Transparency) to introduce a default opt-out option for users regarding the ability of app developers to obtain identifier data on Apple devices¹¹⁹.

These changes may affect the entire ecosystem (Kemp, 2020), although, obviously, players with more power to generate first-party data would be less affected and would maintain the ability to personalize advertising. As a result, these platforms would be much more attractive to advertisers, compared to traditional publishers with smaller audiences. The effects of these changes in terms of competition are discussed¹²⁰ in section 5.1.d.

Next, we will discuss the key role of data (Kemp, 2020; CMA, 2019, pp. 41-42) to personalize advertising, measures its effects and improve transaction matching.

3.3.a. Personalization capability (targetability)

The main disruption of online advertising (compared to offline media) is the increased ability to personalize (Goldfarb, 2014). Thanks to new technologies and the exploitation of

¹¹⁹ Google has announced a similar initiative for Android devices:

<https://support.google.com/googleplay/android-developer/answer/6048248#zippy=%2Cpersistent-identifiers-including-android-id%2Ctargeting-devices-without-an-advertising-id%2Cadvertising-id-violations>

¹²⁰ Authorities in the United Kingdom, France and the European Commission are looking into some of these actions (in addition to a complaint in Germany).

<https://www.gov.uk/government/news/cma-to-investigate-google-s-privacy-sandbox-browser-changes>

<https://www.gov.uk/government/news/cma-to-have-key-oversight-role-over-google-s-planned-removal-of-third-party-cookies>

<https://www.autoritedelaconcurrence.fr/fr/communiqués-de-presse/apres-une-activité-très-soutenue-en-2020-l'autorité-de-la-concurrence-annonce>

https://ec.europa.eu/commission/presscorner/detail/en/ip_21_3143

<https://www.competitionpolicyinternational.com/germany-hits-apple-with-antitrust-complaint-over-new-iphone-software/>

The recent case (4:20-cv-00957) *US Attorneys Gen. (Texas et al) v. Google* (¶ 224-229) also seems to delve into this issue.

data on the audience, advertising campaigns can target specific population niches, personalizing campaigns even at the level of each individual (Goldfarb & Tucker, 2011).

This possibility of personalization (targetability) has different forms (Goldfarb, 2014; Autorité de la Concurrence, 2018)

- **Contextual targeting:** this consists in showing different ads that may be of interest to users based on the content or material on the web page or mobile app (in display advertising) or on search terms (in search advertising, where ads are essentially contextual¹²¹). Web or app context can also be used for "anti-targeting," i.e., to prevent the ad from appearing on a page where the context is irrelevant (CMA, 2020, p. M74). This contextual targeting is, in fact, what has always existed in the most relevant traditional media (e.g., TV, radio and print media), although online advertising can supplement this contextual targeting in other ways, which we will discuss below.
- **External factors:** such as the type of device, weather, date (according to month, week and day) and time (Autorité de la Concurrence, 2018; CMA, 2020, pp. M75-M76). Again, traditional advertising already offered some room to change according to these factors, although the flexibility and adaptability of online advertising is far superior.
- **Sociodemographic factors:** such as age, gender, education or geo-linguistic variables, which can be approached, inferred or even directly learned at an individual level (European Audiovisual Observatory, 2017; Geradin & Katsifis, 2019a), which is a big change with respect to traditional advertising (which works with aggregated audience profiles).
- **Geolocation**¹²²: which can be obtained with great accuracy¹²³ at an individual level and in real time (which, again, is a disruption compared to traditional advertising, which also has the capability for geographic variation, though very limited). This greatly increases the value of certain advertising formats, for example, by pinpointing nearby sellers of a product in which we have shown interest.

¹²¹ For the user who has shown interest with the keywords entered, which leads interested companies to bid accordingly.

¹²² The relevance of geolocation has led us to consider it as a separate factor from external and sociodemographic factors.

¹²³ Even when not using a mobile device, the zip code or IP address reveals geographic information.

- **Behavioural advertising (behavioural targeting¹²⁴):** this consisting in showing different ads that may be interesting for users based on their past behaviour (online activity and web browsing history, clicks, purchases, interests or revealed intentions). This can be very important in combination with the previous tools to show relevant personalized ads in real time (Goldfarb & Tucker, 2011). An extreme case would be "retargeting" which consists of showing (usually persistently¹²⁵) ads to consumers about products in which they have shown recent interest, hoping that they complete their action or purchase.

As we will discuss below, targetability affects not only online advertising efficiency but also the variables that determine the degree of competition and competitiveness of agents in the market. The two comparative advantages of online advertising (Decarolis, Goldmanis, & Penta, 2018; CMA, 2019, p. 39; CMA, 2020, p. 46) are the attraction of broad audiences and the targetability options¹²⁶ (e.g., adequately estimating preferences, interests and purchase intent). This has two effects:

- Platforms, as publishers with large global audiences, manage to consolidate large first-party databases, complemented by other sources that allow them to collect information outside their inventory. Therefore, platforms tend to be more competitive than traditional publishers with exclusively national presence. Platforms increase their targetability for all users (by improving recommendation and prediction algorithms) but more so for users whose attention they have already captured. Targeted advertising is useful (CMA, 2019, p. 38) not only to attract advertisers through network externalities but also to retain users themselves, who will value the platform positively for its more relevant and informative advertising.
- Technological intermediaries in the open display (where platforms such as Google and, to a lesser extent, Amazon and Facebook are also present) add value by enriching transactions with user data. Advertisers value not only the size of the audience (which traditionally gave the publisher bargaining power) but also the degree of knowledge about that audience (which gives power to technological intermediaries). This puts new

¹²⁴Also known as Behavioural Online Advertising (BOA).

¹²⁵Advertisers may display ads for the product, even if it has no connection with the context or type of page visited, unless the advertiser resorts to "anti-targeting" and tries to limit ads to pages where they are relevant.

¹²⁶These are the traditional economies of scope between selling content (to attract attention) and advertising (to monetize that attention), which generates network effects, amplified in the case of online advertising by the effect of data (Evans, 2019).

competitive pressure on traditional publishers but also on traditional intermediaries such as agencies.

Therefore, targeting capability linked to the accumulation of data has a very significant impact on efficiency and competition. And the disruptive potential of data refers not only to targetability but also to the ability to measure and carry out campaigns.

3.3.b. Ability to measure campaigns and variable remuneration schemes

Another major disruption of online advertising (compared to offline media) is the increased measurability (Goldfarb, 2014). It is easier to estimate the effect of specific ads or campaigns on consumers. The aforementioned tracking of users is not only useful for building profiles for personalization (profiling), but also for improving measurement (CMA, 2020, p. G1). For instance, the immediate reaction to an ad (click) or the options to track users through cookies, IP addresses or mobile device identifiers after being impacted by an ad or a campaign (Goldfarb & Tucker, 2011).

The possibility of measuring and tracking campaign performance implies the consolidation of variable remuneration schemes for inventory owner of the space or the intermediary (Marty, 2019):

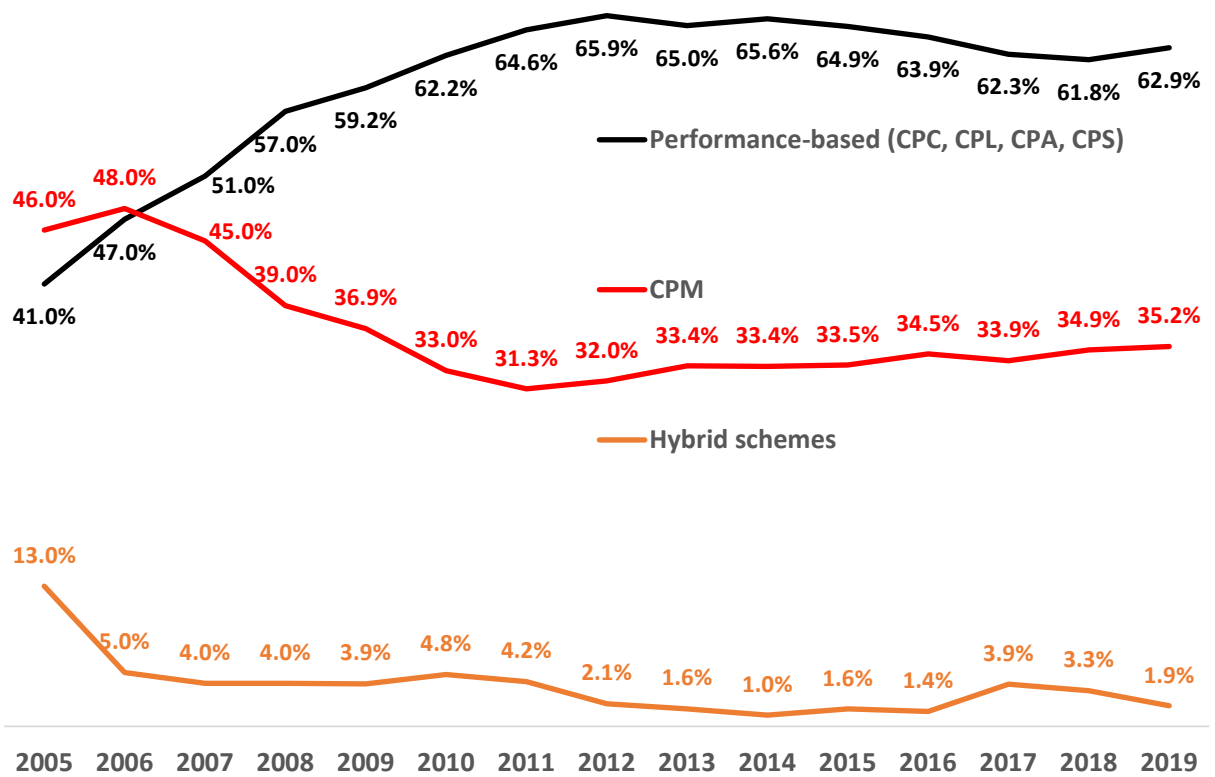
- **Cost-per-impression (CPM, Cost-per-view/impression,¹²⁷ standardized to cost-per-mille impressions):** the fee charged depends on how many users have seen the ad.
- **Cost-per-click (CPC):** the fee charged depends on how many users have clicked on the ad.
- **Cost-per-lead (CPL):** the fee charged depends on how many users have disclosed some information in response to the ad (by providing a lead such as their zip code or their social media profile).
- **Cost-per-action (CPA):** the fee charged depends on how many users have performed the targeted action (e.g., registering on the website or app or linking the account with their social media profile).
- **Cost-per-sale (CPS):** the fee charged depends on how many users have actually purchased the product (e.g., following a search ad or a retargeting action).

For illustrative purposes, Figure 14 shows the development of the different schemes in the US. Pure performance-based schemes, mostly CPC but also CPS or CPL/CPA, are the

¹²⁷Cost-per-view (CPV) in the case of video (AdIC, 2018, p. 23).

majority because they are generally used in search and part of display. CPM is, however, relevant because of its widespread use in display. The third possibility (the least used) is the combination of both (CPM with performance schemes such as CPC) under a hybrid scheme.

Figure 14. Share of the different remuneration schemes (% of US revenues)



Source: (IAB & PWC, 2020 and previous years)

Indeed, in display advertising, it is more common for advertisers/agencies to pay by CPM (Beales III, 2019). This scheme is more similar to traditional media remuneration (based on audience), because the goal is to improve brand awareness and brand image, taking advantage, in addition, of the greater richness of certain formats such as video, native advertising or branded content with effects on sales in the long term¹²⁸ (Decarolis,

¹²⁸For example, the sale of a durable, high-priced good (such as a car) does not occur immediately but can be stimulated by exposure to online advertising.

Goldmanis, & Penta, 2018) rather than in the short term. In addition, the ad space (e.g., on a digital newspaper page) is relatively static and can be visited by different users from the same target group, so the campaign is still effective if it achieves multiple impressions. If the advertiser/agency wants a more immediate effect (in certain contextual formats¹²⁹, on e-commerce sites or in retargeting campaigns), pure performance-based schemes (CPC but also CPS/CPL/CPA) or hybrid formats can be used. Given this more direct impact on short-term sales, advertisers/agencies will tend to pay more in CPC than in CPM, although each campaign has different objectives and there are other variables to be taken into account, including media quality and contextual factors.

In search advertising, search engines auction their space on the Search Engine Results Page (SERP) based on keywords (Beales III, 2019). The most commonly used remuneration scheme is CPC (Decarolis, Goldmanis, & Penta, 2018) because each page loaded by the user's search for certain keywords is a one-off shot to reach a consumer who, in addition, is clearly showing the intention of buying (plus it is not advisable to base a campaign on impressions because of the simplicity of the format).

As search engines are remunerated in CPCs (Marty, 2019), their space allocation decisions depend not only on the price bid but also on the search engine's own internal estimate (as publisher and owner of its inventory) of the click-through rate (CTR or CPI, clicks-per-impression). This probability is calculated based on the consumer estimated interest in the ad (based on historical advertiser data, user behaviour data, etc.). The CTR or CPI is a quality indicator of how the ad is performing.

Weighing the different bids (in CPC) by probability of clicks maximizes revenue for the publisher, whose intention is to optimize its inventory (its revenue in terms of CPM). CPM and CPC are related by the CTR or CPI according to this mathematical expression (Manne & Wright, 2011) :

$$\text{cost_per_impression(CPM)} = \text{cost_per_click(CPC)} \times \text{clicks_per_impression(CPI)}$$

To maximize their revenue in terms of CPM, publishers aim to achieve high CPC and CPI/CTR. In addition, they also want to maximize CPI/CTR because of the dynamic effects of "better" advertising, which implies a greater probability of keeping the user on their platform or medium, increasing network effects (attracting other players), learning effects (due to improvement of algorithms linked to data accumulation) and economies of scope

¹²⁹See European Commission case (DGCOMP) M.4731 Google/DoubleClick (¶ 15).

(due to complementarity with other services in the ecosystem). For their part, advertisers/agencies want to minimize CPC (the unit price they pay) while maximizing the CPI/CTR (an indicator of campaign success and reach among the target audience) and avoid paying for excessive impressions (that have not led to a click or to another type of conversion action).

Therefore, the incentives of the advertiser/agency and the publisher are aligned in maximizing the CPI/CTR, as both want a high quality ad, relevant to each user, and have incentives to enrich their demands and offerings with data.

In principle, increased measurability should improve the efficiency of decisions by all players: advertisers would allocate their investment to the most effective media, while publishers would maximize the profitability of their inventory (knowing which spaces are most profitable or generate the most attention from users). But some analyses (ACCC, 2019, p. 2;12;14; ACCC, 2021, p. 17) point out that players at the ends of the value chain (advertisers and traditional publishers) are not benefiting from this increased measurability (in comparison with platforms selling their own inventory and with some intermediaries in open display). One reason for this may be the complexity of the technology associated with programmatic advertising, which we discuss next.

3.3.c. Programmatic advertising

Programmatic advertising is one of the biggest disruptions generated by digitalization in the field of advertising. It consists of the automatic process of real-time negotiation (Real-Time Bidding, RTB) of the purchase and sale of ad placements in online media (European Audiovisual Observatory, 2017). This is a major disruption because automation provides sizeable efficiencies in online advertising, given the greater volume and complexity of transactions compared to traditional media.

The increase in transaction volumes is linked to the larger economies of scale in the digital environment, with lower costs for providing content and, therefore, for generating advertising inventory (Crémer, de Montjoye, & Schweitzer, 2019).

This complexity is due to the change in the nature of advertising. Advertising sales were traditionally contextual: the advertiser was interested in a particular space because its audience was relevant to its brand (European Audiovisual Observatory, 2017). However, in online advertising, although a contextual adaptation to the medium may be maintained, advertisers are increasingly prioritizing the ability to personalize at the individual level, to the point that they may even display highly relevant ads to the user on websites or apps

unrelated by context¹³⁰. As a result, advertisers are moving from valuing only the placement of an ad based on its audience (which used to determine publishers' competitiveness and, therefore, their remuneration) to also including in the equation the ability to personalize based on data (Geradin & Katsifis, 2019a).

In other words, programmatic transaction matching has a higher degree of automation, and intermediaries (DSPs and ad exchanges/SSPs) reduce search and transaction costs by allowing advertisers/agencies to bid simultaneously for multiple publishers' space (Bitton, Pearl, Dolmans, & Mostyn, 2019).

Even if these techniques seek to lower costs by minimizing human interaction (as compared to traditional insertion orders from advertisers/agencies to publishers, negotiated bilaterally), this varies across different types of transactions in the programmatic ecosystem (CMA, 2020, pp. M13-M14). Ad space buying and selling platforms (ad exchanges, whose functions are generally being integrated by SSPs) can organize **different types of auctions** among bidders (DSPs¹³¹) based on the preferences of publishers and advertisers/agencies¹³²:

- **Open auctions:** available to any advertiser that submits a competitive bid for the space.
- **Private marketplaces (PMPs):** an auction among a closed group of advertisers¹³³ or eventually giving priority to an advertiser (preferred deals, where the advertiser can decide to buy the inventory at a certain price before the auction).
- **Deals (or PGTs, Programmatic Guaranteed Transactions):** deals negotiated *ex ante* between the advertiser/agency and the publisher, which are an adaptation of traditional insertion orders (bilateral agreements between an advertiser and a publisher) but adding a programmatic layer of data to take advantage of greater personalization possibilities.

In general, publishers tend to reserve the most “in-demand” inventory for closed agreements and markets, auctioning the rest on the open market¹³⁴, which, in principle,

¹³⁰ In formats such as retargeting.

¹³¹ In turn, DSPs organize an auction among their advertisers and agencies to ensure they are competing with their best bid.

¹³² See *Decision of the Competition Authority n° 21-D-11 of 7 June 2021 on practices implemented in the Internet advertising sector* (¶ 58).

¹³³ In these cases, the exchange limits access to DSPs that provide bids from identified advertisers.

¹³⁴ Either through SSPs/Exchanges or by handing over inventory to Ad Networks, which can also connect to Exchanges (or sell to agencies).

brings them lower gross revenues. At the same time, the fees charged by SSPs in open auctions are higher (CMA, 2020, pp. M25-M26) because the role of technology in matching transactions is greater (saving advertisers/agencies and publishers more work), these fees being lower in closed markets and (especially) in closed deals (where significant human work is still required on the part of advertisers/agencies and publishers).

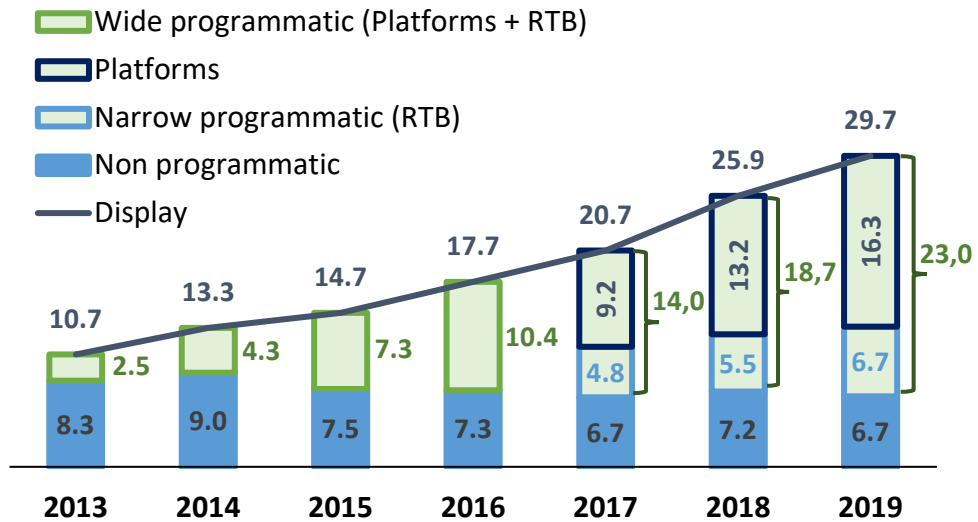
As a result, net revenues for publishers are generally lower in open auction markets. In any case, the publisher seeks to optimize its ad space, i.e., to what extent more revenue is extracted given the quality or demand of inventory. Auction mechanisms are very efficient at the static level (they ensure optimal allocation of space) and at the dynamic level (they reveal advertisers' willingness to pay and provide powerful signals to guide publishers' optimal decision-making in the short and medium term).

There are different **definitions of programmatic advertising**. On the one hand, a **narrow definition** includes negotiations only via the RTB mechanism in open display (the part channelled through DSPs and Exchanges/SSPs in Figure 9). On the other, a **broader definition** that adds the sale of platform advertising (seen in Figure 10), which also follows an auction model and is open to any advertiser/agency that bids competitively, even if it is a closed ecosystem¹³⁵. As shown in Figure 15 and Figure 16, the growth of programmatic advertising is caused, in its broad definition, by the rise of platforms. This is another evidence of the above-mentioned pressure on publishers to adapt to this new environment mentioned earlier (as shown in Figure 11) as their online advertising revenues (included in the narrow definition of programmatic and the non-programmatic part¹³⁶) grow more slowly than those of platforms.

¹³⁵ It is not possible to bid simultaneously in real time on the different platforms because they sell their own inventory without DSPs or third-party exchanges/SSPs being able to access.

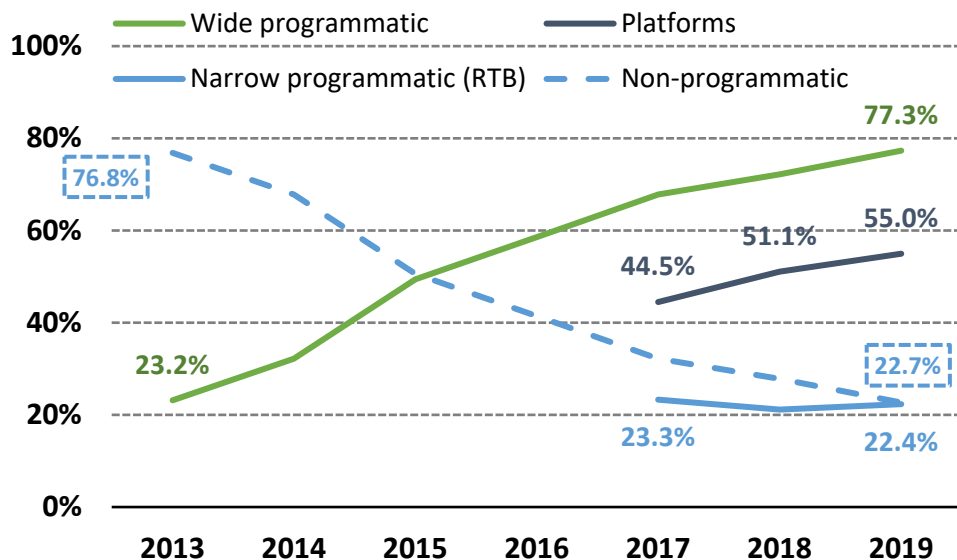
¹³⁶ Non-programmatic advertising (which does not fall under the broad definition either) includes traditional insertion orders negotiated directly between advertisers/agencies and publishers (the blue arrow in Figure 9 and Figure 10).

Figure 15. Display advertising in Europe (billions of euros)



Source: (IAB Europe, 2020)

Figure 16. Programmatic and non-programmatic advertising in Europe (% of display)



Source: (IAB Europe, 2020)

In fact, although the use of programmatic technology is quite significant in display, we must consider that automation in buying and selling of advertising also affects the other

segments because of the presence of platforms, especially in search¹³⁷ (Google being the predominant player, followed by Microsoft-Bing) but also in classified ads (vertical search engine platforms and price comparison websites) and others¹³⁸ (e.g., leading platforms in email advertising such as Google).

The use of programmatic technology, increasingly relying on auction mechanisms (Decarolis, Goldmanis, & Penta, 2018) and including data to enhance targetability and measurability, is key to explaining the growth of online advertising compared to traditional formats. We will now assess how this growth in online advertising affects efficiency and competition.

3.4. Impact of online advertising on efficiency

3.4.a. Impact on static and dynamic efficiency

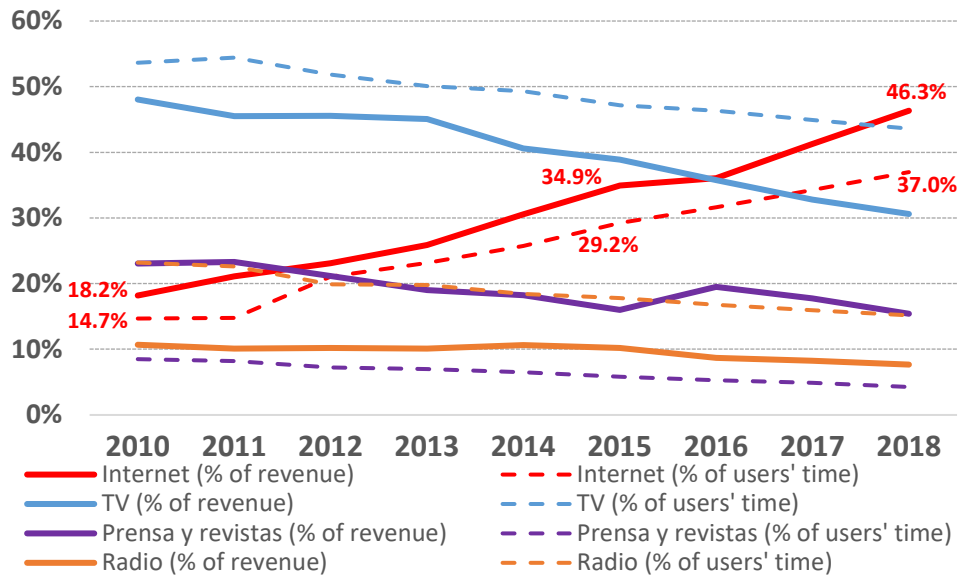
Online advertising has a positive impact on efficiency in several ways, generating at the same time a pro-competitive effect.

First, it increases **productive efficiency**, i.e., the ability to provide the service at the lowest feasible cost. As we discussed earlier (in the programmatic advertising subsection), the digital ecosystem facilitates a higher volume of transactions at lower transaction costs between the two sides of the market. In addition, targetability also contributes to increased productive efficiency: advertisers reach their target audience more easily, and their investment is more profitable. A sign of online advertising efficiency (Manne G. , 2019) is the fact that its revenue share is greater than its share of household consumption time, as can be seen in Figure 17.

¹³⁷ For example, the percentage of automated buying and selling over total search and display is approximately 66.4% in Spain (IAB Spain, 2021 and previous years). Automated buying and selling includes the broad definition of programmatic in display plus total search (given that in search, the market is made up of platforms, with Google standing out).

¹³⁸ For example, the percentage of programmatic advertising (in a broad sense) in relation to non-search advertising (including not only display but also classifieds and other) is around 80% in the US (IAB & PWC, 2020 and previous years).

Figure 17. Share of media in advertising revenue and in individuals' time (US)



Source: (Austin, Barnard, & Hutcheon, 2016; Johnson G. , 2018) % of time since 2016 reflects estimates.

Increased productive efficiency means more affordable and efficient advertising for all advertisers. But this is especially important for start-up/small/innovative companies¹³⁹, which need (among other things) to invest in advertising to publicize their new products or brands and thus disrupt the position of incumbent companies. Therefore, more efficient advertising generates pro-competitive effects throughout the economy.

Secondly, online advertising increases **allocative efficiency**, i.e., the optimal use of resources in those activities where they are most valuable. Online advertising increases the variety of formats and media, facilitating, in addition, the connection between a greater number of publishers and a greater number of advertisers/agencies. Again, the targeting options also contribute to increase allocative efficiency: consumers receive the ads they

¹³⁹ There may be a way in which targeted advertising may affect smaller advertisers negatively. The ability to track players throughout their browsing implies that large companies (that sell more expensive products or can afford more expensive campaigns) may try to impact consumers that fall within their potential audience, even on pages not connected to the product or ad by context, making it difficult for smaller advertisers to access also on pages with smaller audiences. If advertising were more contextual, small advertisers would have less competitive access to these niche pages. Therefore, this effect is felt more on display advertising than on search advertising (as the latter is essentially contextual, and the attractiveness of the bidding is driven by keywords).

are most likely to be interested in. And greater measurability and variable remuneration schemes (based on ad or campaign performance) also drive this allocative efficiency.

This allocative efficiency of advertising is also felt throughout the economy (CMA, 2019, p. 38). Reduced search and purchase costs increase potential sales and overall efficiency and welfare (of both producers and consumers) and the fact that companies are able to better communicate their messages increases market dynamism and the ability of consumers to switch to the best products.

Third, this improved static (productive and allocative) efficiency generates **dynamic efficiency**, creating optimal incentives to compete and invest in the most productive activities. In other words, the incentives introduced in the short run to minimize costs and optimally allocate resources are preserved in the long run, which will lead players that wish to be competitive to innovate and constantly improve.

These dynamic considerations are also conditioned by network spillovers: the larger the platform's audience, the greater the added value for advertisers. Network externalities are more powerful in the digital realm, creating certain feedback between the two sides. And network effects create value, efficiency, consumer welfare and dynamic incentives for optimal self-regulation in quality¹⁴⁰ (although they can also create a tendency towards concentration, as we will discuss in section 5 on competition issues).

Finally, there is another potential positive effect of online advertising on overall efficiency (Beales III, 2019). By facilitating monetization, online advertising can help develop services with public good features, such as information provision or content creation. Public goods (non-rival and non-excludable) tend to be under-provided in the market (relative to what would be optimal) because of the difficulty of those who fund them to obtain an adequate compensation. However, monetization of a "free"¹⁴¹ service for consumers through advertising encourages the provision of products with public goods features, exploiting the aforementioned indirect network effects. This idea becomes important in digital markets, where non-rivalry and non-excludability are even more apparent, leading to zero-price

¹⁴⁰ For example, if a platform starts displaying a lot of advertising with the intention of increasing revenue from its advertisers, it can lose users, which will discourage advertisers and may, paradoxically, end up losing revenue. This is an incentive for the platform to seek the optimal amount of advertising (the maximum that consumers can tolerate given a piece of content).

¹⁴¹ As we have mentioned earlier (and as we will discuss next), the fact that the monetary price for the consumer is zero does not imply that he or she is not paying in other ways (with data, attention and time, or by paying more for the final goods and services because of the cost of advertising).

strategies for providing public goods (together with reduced marginal costs and network externalities).

3.4.b. Impact on the different market players

When describing the market, we have seen that online advertising has caused two disruptions.

First, platforms (as shown in Figure 3) have greatly deepened the **advertising inventory**, not only its size but also its variety, with new consumer services that are attractive to advertisers. This puts pressure on traditional publishers, but, in principle, it is positive for the industry as a whole and, in particular, for consumers (who gain access to new services and better advertising) and for advertisers/agencies (because of the greater variety of media and forms of advertising and the compressed publisher margins). Advertising may become cheaper in terms of price/cost, and quality or variety may improve. The effects will be felt throughout the economy, given the importance of advertising in boosting competition in all sectors.

The only case where increasing inventory would not have a positive effect would be if the trend towards concentration (due to factors such as network externalities, among others¹⁴²) were such that platforms acquire market power, with no counterbalance from demand or from other competitors or media. In this scenario, platforms with a dominant presence (in search, social network, audiovisual content or e-commerce) could degrade conditions for their advertisers (with higher advertising costs for them or their agencies) or users (e.g., with heavier advertising loads or higher payments for the service, either in the form of data and privacy or through a monetary price). Even if there are indirect network externalities, the disciplining effect that these can have on competition and efficiency in other contexts disappears when the degree of concentration and market power is significant¹⁴³.

¹⁴² The trend towards media concentration can also come from company acquisitions. Facebook, with the acquisition of Instagram and WhatsApp, is the clearest case.

¹⁴³ On a theoretical and abstract level, the presence of indirect network externalities could help discipline platforms. If a platform were to degrade conditions for its users (e.g., a heavier advertising load), some of them might leave the platform, causing some advertisers to also leave it, resulting in users receiving "worse" ads, and some users would again leave the platform (triggering a negative feedback loop). However, in a context where platforms concentrate large audiences and a huge part of advertisers' investment, this disciplining effect vanishes.

Secondly, **new (ad tech) intermediaries** are showing up between advertisers/agencies and publishers in the open display, including the platforms themselves (especially in the case of Google and, to a lesser extent, Amazon and Facebook). This intermediary work must be remunerated, so this second disruption affects not only publishers but also other intermediaries such as agencies:

- Regarding the impact on agencies (Goldfarb & Tucker, 2011), before the advent of online advertising, agencies kept the difference between what advertisers paid and what went to publishers¹⁴⁴ (as shown in Figure 2). Now, technology intermediaries also require remuneration for their participation in transaction matching and, especially, for the ability to add data to that matching (necessary to optimize agency/advertiser investment and publisher inventory).
- Regarding the impact on publishers, before the advent of online advertising, they were remunerated according to their audience attraction (as this determined the value of their advertising inventory). Now, in addition to audience figures, they are remunerated for their ability to personalize advertising, and in this area, technological intermediaries are more competitive than publishers.

Agencies and publishers may be forced to pay ad tech costs out of their margins to remain competitive with their customers. But they can also, depending on market and bargaining power, make other decisions that are more burdensome for consumers and overall welfare:

- For example, agencies can pass some or all of this cost on to advertisers. It is true that this higher cost reflects, to some extent, the greater efficiency of online advertising for advertisers. But if the cost increases too much, the demand for advertising could be reduced. This would have a double-negative impact on consumer welfare. First, advertisers could fully or partially pass on these extra costs in higher prices of goods and services to consumers. Second, a smaller amount of advertising would reduce competition in all sectors by losing the dynamizing role of advertising (which brings awareness of new products and messages).
- For their part, publishers can choose to degrade service for their users, e.g., by increasing the price paid by consumers for media consumption (TV, radio, digital press), deteriorating quality or increasing the ad load.

¹⁴⁴ Due to different factors (ACCC, 2020, p. 14), e. g., specialization, strategy, economies of scale and agglomeration by centralizing purchases, and generation of network externalities in connecting the two sides of the market.

However, the role of technological intermediaries should, at least a priori, also increase efficiency. These intermediaries require remuneration because they add value in matching orders and enriching transactions with data. So their impact on the market may be neutral (if the remuneration that goes to these players is offset by a contraction in agency and publisher margins) or even positive, given the impact of the online advertising ecosystem on static¹⁴⁵ (productive and allocative) and dynamic efficiency.

The problem could arise, once again, if there were concerns over competition in this technological intermediation. There is also a tendency towards concentration (e.g., due to network externalities fuelled by learning economies linked to the accumulation and exploitation of data), which means that technological intermediaries with market power are not subject to the discipline that network externalities might exert¹⁴⁶.

More relevant to competition is the sector's vertical integration (as shown in Figure 12 and Figure 13) in two aspects:

- Platforms that act as publishers with their own inventory also act as intermediaries of third-party inventory, most notably Google but also Amazon and (to a lesser extent) Facebook.
- Platforms operate along the entire value chain in open display, providing service to both the demand side (advertisers/agencies) and the supply side (publishers), where again Google stands out.

This integration of services along the value chain can generate efficiencies by reducing margins and saving transaction costs, apart from synergies very specific to this sector and linked to data (such as better interoperability in terms of cookie matching, information reporting¹⁴⁷ or reduction of latency). But integration is also likely to create competition

¹⁴⁵ It should be noted that the ability to target advertising may lead to doubling publishers' revenues (compared to purely contextual advertising). See *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet*, ¶ 23.

¹⁴⁶ Again, on a theoretical and abstract level, the presence of indirect network externalities could discipline intermediaries. For example, a DSP that started charging more would lose agencies, which would make it less interesting for the other side of the market (SSPs/Exchanges that want to sell space), which would further reduce the attractiveness for agencies (triggering a negative feedback loop). On the other hand, an SSP that started charging more would lose publishers, thus having less interest for the other side of the market (DSPs), which would further reduce the attractiveness for publishers (triggering a negative feedback loop). However, intermediaries with considerable market power would not be subject to such discipline.

¹⁴⁷ The information provided by vertically integrated operators will be more accurate and complete because of the consistency and homogeneity of the data sources.

issues that can undermine these efficiencies and lead to a less competitive and less efficient outcome. These scenarios will be discussed below (in section 5 on competition concerns) but, before addressing specific issues, a general analysis of how competition works in online advertising is necessary.

3.4.c. Competition variables in online advertising

In order to carry out a competitive analysis of the sector, we must take into account that advertising, whether in traditional or digital media, is a multi-sided market. Players buying and selling advertising space exhibit platform features because of indirect network externalities.

Any platform has to decide simultaneously the **two prices to charge to each of the two sides** from which its demand comes. In the case of media, these two sides are consumers (audience) and advertisers. Traditionally, there has been a tendency to subsidize consumers' usage (the more elastic, price-sensitive side) to exploit network effects, charging most (or all) of the monetary cost to advertisers. This is even more obvious in digital platforms: consumers are heavily subsidized¹⁴⁸ with zero prices¹⁴⁹ for search engines, social media and audiovisual content, while advertisers continue to bear the entire monetary cost.

When opting for an advertising-based funding model (wholly or partially), a third "pricing" decision must be faced: **attention** (Prat & Valletti, 2018; Wu, 2018). This variable, again, affects both traditional and digital media, although with the specificities that we develop below.

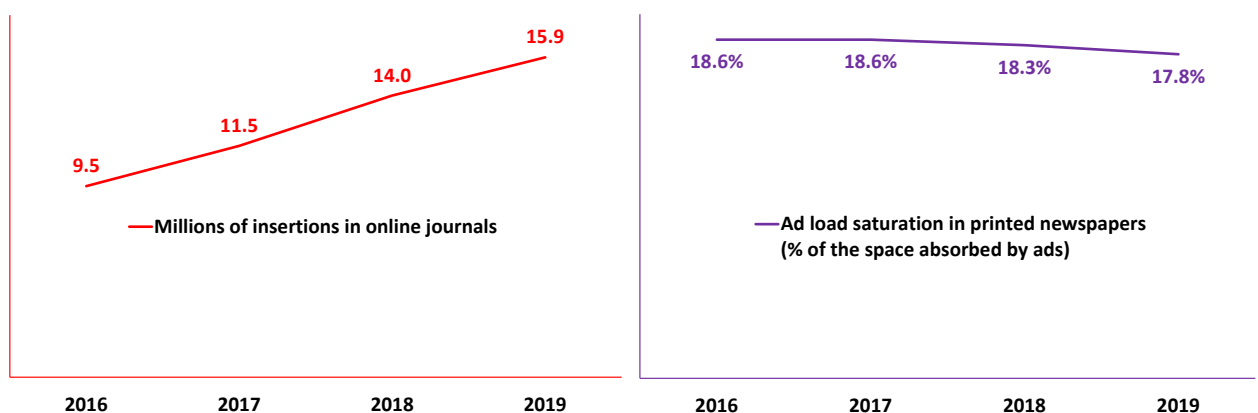
Users spend time consuming media, being reached by advertising campaigns. Therefore, the combination of content and ad placement is also a "price" decision. By way of illustration, Figure 18 shows the evolution of ad insertions in the news media in Spain, comparing digital newspapers to print newspapers (AMI, 2018, 2019). Online advertising insertions increased from 9.5 million in 2016 to 15.9 million in 2019 (a 67% increase). Unless content has increased at the same rate (something that could have happened,

¹⁴⁸ Because consumer willingness to pay seems particularly low in digital services (Holzweber, 2017). This leads to further subsidize the product to attract more consumers, which drive traditional network externalities (the larger the audience, the more advertisers) and make it possible to accumulate more data (amplifying network externalities by the improvement of personalization algorithms).

¹⁴⁹ In fact, the price could even be considered negative (Evans, 2013), given that it includes and subsidizes the use of supplementary products such as email and messaging or premium services, and platforms invest in improving user experience.

although the number of titles remains relatively stable¹⁵⁰), we could say that the price paid by consumers by way of attention to advertising has increased. In contrast, ad saturation¹⁵¹ (% of space taken up by advertising) in print media fell from 18.6% in 2016 to 17.8% in 2019 (down 4.3%), so that measure of consumer cost (in terms of advertising load received or required) has fallen.

Figure 18. Evolution of ad insertions in digital and print newspapers (Spain)



Source: (AMI, 2018, 2019)

When two ad-funded companies start competing for audiences, they will try to offer the best content and the least intrusive ad placement. In the case of online advertising, the competition for audience is even fiercer, because the number of users is useful *per se* (because of the traditional indirect network externalities: the larger the audience, the more advertisers) but also because it makes it possible to accumulate more data (amplifying the network externalities by the improvement of personalization algorithms). Therefore, companies that wish to be competitive¹⁵² will tend to improve the quality and experience of consumers (Evans, 2013), not only with a smaller number of ad placements and more

¹⁵⁰ The number of titles (AMI, 2018, 2019) has gone from 150 in 2016 to 148.

¹⁵¹ It is true that the two figures are not directly comparable because in print media the ad load saturation is relative to total space, whereas in digital media space is unlimited. But the trend is illustrative, with the growth of digital ad impressions indicating that they are obviously an increasingly used tool to fund digital services.

¹⁵² Especially if they are relatively recent entrants, lacking a user base large enough to exploit significant network effects or data advantages.

content¹⁵³ but also with better usability and layout. However, platforms that achieve a certain market power¹⁵⁴ may gradually increase ad placement, which is tantamount to deteriorating the product for consumers (increasing the "price" in terms of attention required¹⁵⁵).

Additionally, online advertising-financed models face a fourth pricing decision: **data** (in this case, it is a variable exclusive to digital media, absent in traditional media like TV, radio or newspapers). Digital platforms have to weigh the degree of comprehensiveness they will opt for in data accumulation, i.e., to what extent they will make users "pay" with less privacy¹⁵⁶ (e.g., greater disclosure of personal information or browsing history¹⁵⁷).

And the fact is that data (this fourth pricing decision) is crucial for competition in the sector, interacting with the variables of audience and attention. Platforms try to maximize their audience and the time users spend on them¹⁵⁸ to increase the accumulation of data. This information about specific users is useful for personalizing advertising targeted to all consumers (because that information feeds algorithms to better infer preferences and interests of all consumers, even if they are not users of the platform), but it is especially useful for personalizing advertising targeted to those specific users themselves, who are also already part of the platform's audience. Personalized advertising (necessarily based on data accumulation) is key to boosting network externalities (CMA, 2020, p. 45;154), not only because it attracts advertisers but also because it can retain more consumers (since advertising is relatively less annoying and more relevant and appropriate to their interests).

¹⁵³ This initial strategy of fewer ads and more content, despite its short-term cost in terms of revenue, may have been one of the keys to Facebook unseating MySpace (Wu, 2018).

¹⁵⁴ Market tipping towards a few operators because network externalities lead to concentration (winner-takes-it-all dynamics).

¹⁵⁵ This increase in advertising placement may be occurring in markets where there are preponderant operators such as Google in search (Wu, 2018; CMA, 2020, pp. C41-C43) or Instagram in social media (CMA, 2020, p. C69).

¹⁵⁶ If the consumer's willingness to pay a monetary price is low in digital services (Holzweber, 2017), then many platform users will opt to "pay" for the service by transferring this personal data.

¹⁵⁷ We should remember that platforms are able to accumulate data beyond their own inventory in several ways: browsing within the platform (access to URLs in Facebook or Twitter apps/webs), browsers or devices (such as Chrome or Android in the case of Google), login sessions on different devices and, finally, intermediary, server or data analytics services to third parties (CMA, 2020, pp. G25;G35;G76-G78;M76).

¹⁵⁸ Reducing the ad load if necessary, improving the experience and adding more free services to generate envelopment and ecosystem experiences.

The following chart summarizes how to compete in advertising-based digital media (compared to traditional non-digital media).

Table 1. Examples of funding of digital and non-digital media

	Business model	Price charged to advertisers	Price charged to consumers			Examples
			Monetary price	Attention time (ad load)	(ata (privacy))	
Non-digital media	Ad-free media	$P = 0$	$P > 0$	$P = 0$	n.a.	Ad-free TV channel or newspaper
	Ad-funded media	$P > 0$	$P \geq 0$	$P > 0$	n.a.	Free TV, radio or newspapers (monetary price equal to zero) or a newspaper with a subsidized/low price (not covering the whole cost)
	Heavily subsidized media	$P > 0$	$P \leq 0$	$P \gg 0$	n.a.	Free newspapers (whose price can be considered even negative if some gifts are bundled), more dependent on advertising revenues
Online media	Free online media	$P > 0$	$P = 0$	$P > 0$	$P > 0$	Free online journals and OTT (over-the-top) TV and radio
	Premium (paid) online media	$P \geq 0$	$P > 0$	$P \geq 0$	$P \geq 0$	Models based on suscription fees that can remove advertising for premium users who pay for the service (although data on them are still accumulated, given that they are very useful to improve the service, even in the absence of targeted advertising)
	Digital platforms	$P > 0$	$P \leq 0$	$P > 0$	$P \gg 0$	The most common business model in platforms is a heavy subsidization for consumers (with the addition of messaging services, like email or messaging, resulting in "negative prices") in order to attract audiences and data to optimize network externalities

Source: own elaboration

Note: n.a. means "not applicable"

Finally, keeping in mind that some platforms (especially Google but also Amazon and, to a lesser extent, Facebook) act both as publishers with their own inventory and as intermediaries of third-party inventory, we could consider a fifth pricing variable: **the cost**

charged for this intermediation in open display. Platforms will also factor in this complex interrelationship between their intermediation work and their role as publishers of (to determine key variables such as attention or data). An example of the interrelationship between the two areas is that the data collected in their role as publishers (by providing services to end users) increases their competitiveness in intermediation¹⁵⁹. Another example is that the data collected in third-party inventory intermediation also facilitates their work in trading targeted advertising on their own inventory, so the platform will also be interested in maximizing the size of that third-party inventory¹⁶⁰.

In short, we can draw the following conclusions from such a multi-faceted market as online advertising:

- The **monetary price** of some services (such as search engines, social media and audiovisual content) is usually **free for consumers** and **paid for by advertisers**. But **consumers do pay** a real cost in economic terms **with their attention time** (affected by advertising placement) **and their data**¹⁶¹, which are competition variables and affect consumer welfare. In addition, what advertisers pay can also be passed on to the consumer via higher prices for final goods and services.
- The dynamics of competition tend to **favour business models intensive in data accumulation** (Economides & Lianos, 2021). To this end, consumer usage is heavily subsidized with free services and low or reasonable ad load to increase audience and generate more data. This is due to both amplified traditional network effects (more audience implies more advertisers) and the importance of data (more audience implies more data accumulation, better targeted advertising, more advertiser attraction and higher consumer retention).

These conclusions are essential to understand the competition variables in the sector and, therefore, to analyse where the possible issues may lie, as we will review in section 5. But first, we will look specifically at the online advertising sector in Spain to see to what extent it reflects the general aspects discussed in this economic description.

¹⁵⁹ This leads to exacerbating the subsidization of end users to increase audience and data accumulation.

¹⁶⁰ However, recent moves by a company like Google to restrict the use of third-party cookies (Schuch, 2020; Geradin & Katsifis, 2020a) have a negative impact on the sale of targeted advertising by third parties, so the channel mentioned in this second example does not seem too powerful.

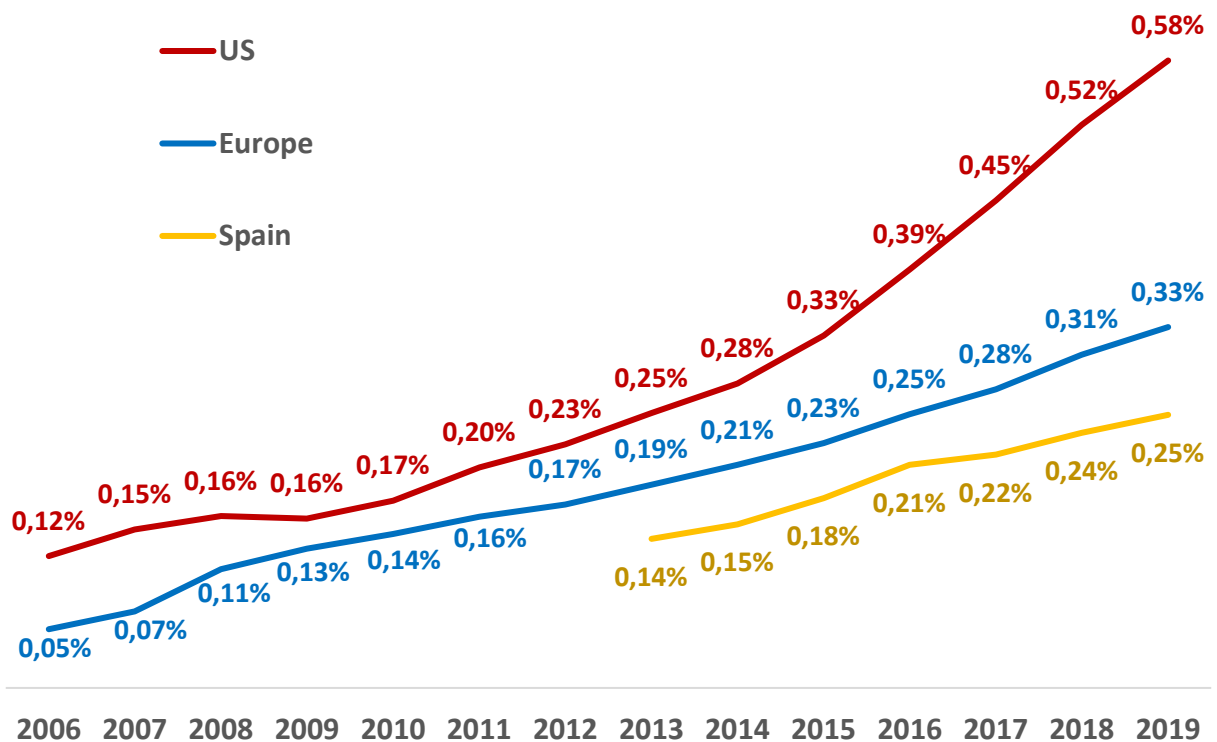
¹⁶¹ Therefore, the cost of the service is not just what advertisers pay. This leads us to add some caution to some works that find that the price of online advertising is falling (Mandel, 2019), as the cost/price of advertising could be charged through higher ad load and/or more data accumulation.

4. The online advertising sector in Spain¹⁶²

The online advertising sector in Spain (as shown in Figure 19) may account for 0.25% of GDP and it is growing noticeably, although still below its share in Europe and the US (although we should bear in mind that data from public sources for Spain may underestimate the size of the online advertising sector, as we will discuss below). This figure does not exactly show its share of GDP (given that the figures on online advertising are for turnover or revenue, while GDP measures added value, subtracting intermediate consumption from gross revenue), but its trend in time and geographical comparisons are illustrative.

¹⁶²The economic description in this section has a merely descriptive approach, and divisions made cannot be considered in any case an analysis of a relevant market definition (a task that would require a specific competition investigation analyzing the demand-side and supply-side substitutability of these segments, in addition to other considerations such as geographic delimitation).

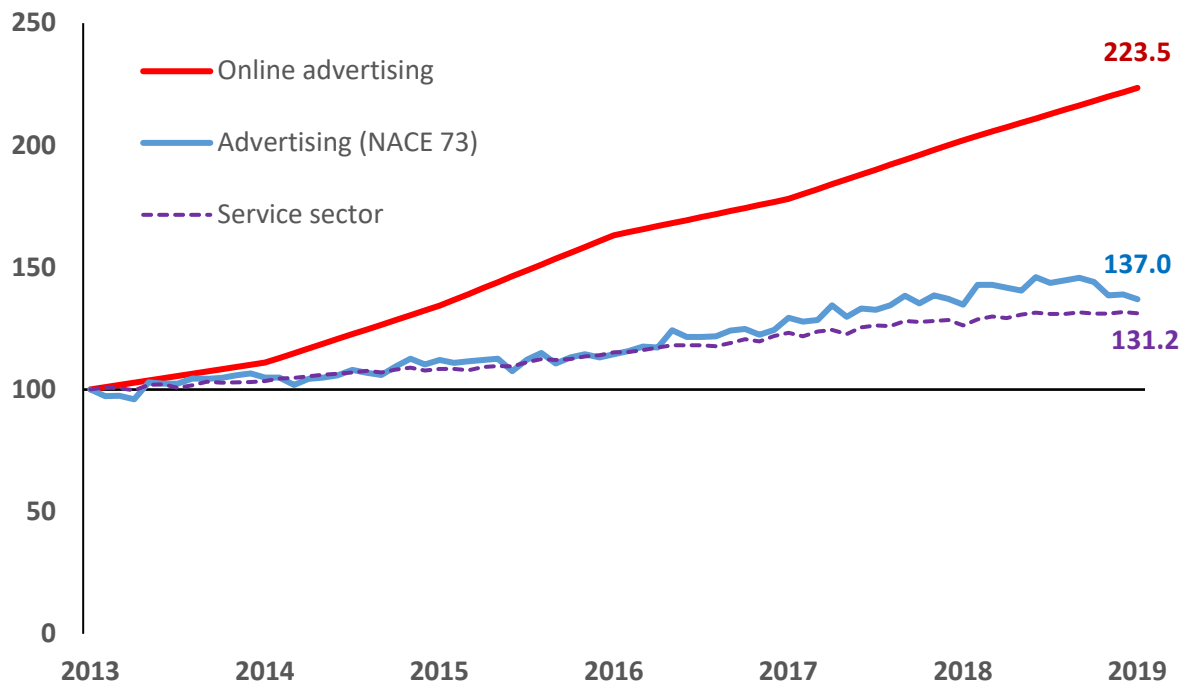
Figure 19. Evolution of the online advertising sector (% of GDP)



Source: GDP data from Eurostat and IMF and advertising data from IAB (IAB Spain, 2021 and previous years; IAB & PWC, 2020 and previous years; IAB Europe, 2020 and previous years)

In Figure 20, we compare the evolution of online advertising revenues with business figures for the aggregated service sector and for total advertising (code 73 "Advertising and Market Research" of the National Classification of Economic Activities, NACE). With the necessary caution (because of the difference in sources and methods), we can clearly see how online advertising has grown in recent years well above average in the advertising sector and in the service sector as a whole. Online advertising turnover has increased by more than 120%, compared to 30% to 40% of advertising in general and the service sector as a whole.

Figure 20. Turnover in the service and advertising sectors in Spain (2013 = 100)



Source: service sector and general advertising data from INE (Service sector activity indicators) and online advertising data from IAB (IAB Spain, 2021 and previous years)

And it should be born in mind that the size of the online advertising sector may be even larger than public estimates. According to internal CNMC estimates (based on information received from operators in information requests¹⁶³), the **online advertising sector in Spain** could have exceeded **€3.45 billion in 2019** between its two most important components: **search and display**¹⁶⁴. This implies that, as Table 2 shows, public estimates available from other sources may be somewhat underestimated, possibly due to the difficulty of capturing smaller advertisers' investment in large platforms (i.e., Google, Facebook and Amazon).

¹⁶³ As pointed out in the introduction, between late 2020 and early 2021, a round of information requests was issued to around 100 operators across the ecosystem: advertisers, media agencies, technology intermediaries, platforms, publishers and different associations. The CNMC reiterates its thanks to all the operators (with special thanks to their staff) who have diligently submitted their contributions.

¹⁶⁴ Publicly available estimates for 2020 suggest that the market may have contracted.

Table 2. Estimates of the 2019 online advertising market in Spain

Segments	CNMC estimates		IAB Spain estimates		InfoAdex estimates	
Search	1.5 billion EUR	43-44%	992.6 million EUR	35.90%	869.4 million EUR	36.50%
Display	1.95 billion EUR	56-57%	1,775.6 million EUR	64.10%	1,511.1 million EUR	63.40%
SUBTOTAL	3.45 billion EUR	100%	2,768.6 million EUR	100%	2,380.5 million EUR	100%
Estimated rate of annual growth (last 3 years)	20%-25%		11%-13%		9%-13%	
Other *	n.a.		382.0 million EUR		> 0	
TOTAL	> 3.45 billion EUR		3,150.2 million EUR		> 2,380.5 million EUR	

* The CNMC has not included estimates for classifieds, so the market size of the online advertising sector is more than €3.45 billion. The IAB report includes classifieds (€260 million), digital out of home (OOH, €82.1 million), online audio (€35.4 million) and connected TV (€4.5 million). The Infoadex report includes influencers (€61.8 million) and native advertising (€22.5 million), which have been included in Infoadex's display figures. There could also be part of digital media buying in the branded content total (€357.9 million) and outdoor advertising (€423.3 million).

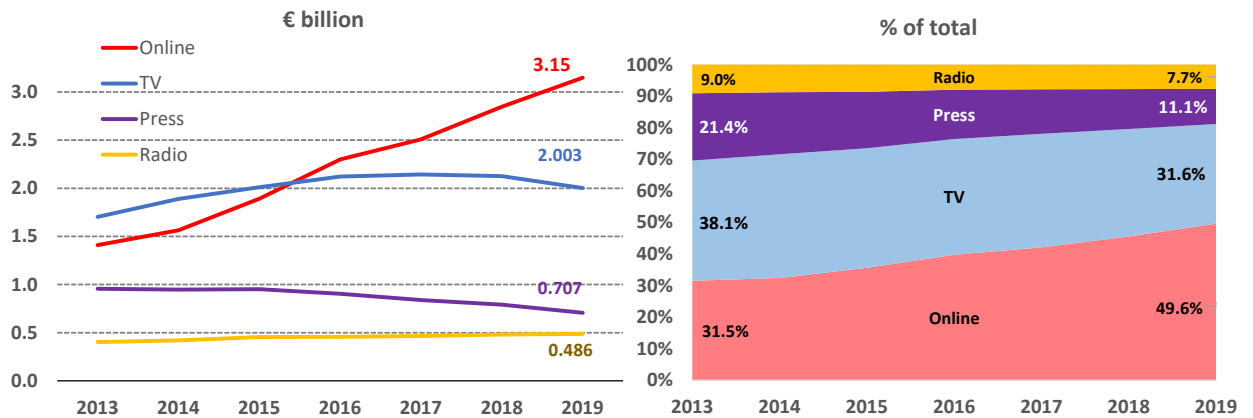
Source: own elaboration¹⁶⁵ IAB (IAB Spain, 2021 and previous years) and Infoadex (Infoadex, 2020 and previous years)

In any case (with any of the three estimates), online advertising has overtaken television as the main medium and is now close to 50% of the total (as shown in Figure 21), and it may even have surpassed this threshold with the CNMC estimates¹⁶⁶.

¹⁶⁵ Although the ideal is data based on user location (IP address in Spain) the availability of data has prompted some players to use the advertiser/agency billing in Spain criterion. Data obtained in dollars have been changed to euros at the annual exchange rate.

¹⁶⁶ These figures are similar to those of other geographical areas (see the beginning of Section 3).

Figure 21. Evolution of advertising in Spain



Source: data from digital media¹⁶⁷ (IAB Spain, 2021 and previous years) and other media (Infoadex, 2020 and previous years)

The most striking aspect of the evolution of the online advertising sector is the weight of two platforms¹⁶⁸: **Google and Facebook**, which may account for **more than 70% of the market** if we consider the sum of search and display¹⁶⁹.

Google stands out in the search market but also (although to a lesser extent) in display for the revenues it earns from its own ad inventory on YouTube and, especially, for its significant share in all third-party inventory intermediation services (in open display). In total, Google accounts for around 50% of market revenues considering the sum of search and display.

Facebook stands out for its market share in display thanks to the revenues from its own inventory on Facebook and Instagram, to which it adds a relatively small role (compared to Google's presence in intermediation) in trading third-party inventory (mainly in publishers' mobile applications). In total, Facebook accounts for around 20% of market revenues if we add search and display.

¹⁶⁷ We have chosen to take digital media advertising data from IAB instead of Infoadex because the latter may underestimate market total to a bigger extent. As the IAB estimate was also adjusted upwards in 2019 (over 2018) because of methodological changes, the series has been extrapolated linking the growth rates.

¹⁶⁸ The impact of concentration dynamics in terms of competition is analyzed in section 5.

¹⁶⁹ The market coverage obtained by the CNMC in its requests for information was not complete, although it does offer a sufficient degree of certainty regarding the estimates for the main operators. The CNMC has applied conservative and cautious criteria when making these estimates.

Amazon may be added to these two platforms in the future. Although its share is still much lower, the strong growth of its advertising revenue on its own inventory, coupled with the boom in e-commerce accelerated by the pandemic, may make it a very competitive company in this area (Amazon is also present in intermediation services for third-party inventory, but with lower significance compared to Google).

4.1. Search advertising

The search advertising market accounts for around €1.5 billion in Spain. In the period 2017 to 2019, according to CNMC estimates, this segment grew by approximately 15 to 20% annually. It is usual in this sector to consider only general search engines such as Google and Microsoft-Bing¹⁷⁰ (which includes not only Bing but the syndicated service provided to other search engines such as Verizon's Yahoo), without taking into account specialized (vertical) search engines¹⁷¹.

As Table 3 shows, it is a tremendously concentrated sector, where Google captures over 90% of the revenues.¹⁷² These figures are analogous to those obtained for other countries such as the United Kingdom (CMA, 2020) and Australia (ACCC, 2019, p. 8). In fact (as shown in Table 3), it is estimated that its relative market share has been increasing steadily over the last 3 to 5 years.

¹⁷⁰ Other less important general search engines in Spain would be Yandex or Baidu. In addition, there are optimization tools that link to several search engines (such as Kenshoo or Marin), but they are marginally important compared to Google's analogous tool (Search Ads 360).

¹⁷¹ Although some advertisers/agencies inquired by the CNMC do consider in this area certain search actions within specialized search engines, or in searches on Amazon or on platforms (such as Apple), their significance would be small, in any case.

¹⁷² This situation is consistent with the preliminary and circumstantial analysis carried out by the CNMC within the framework of Case [S/0007/20: GOOGLE UNOFFICIAL TECHNICAL SERVICE](#).

Table 3. Estimates of the search advertising market in Spain (2019)

Company	Market share and size	Annual estimated growth 2017-2019
Google	> 90%	Slight increase
Microsoft Bing	< 10%	
Other	< 5%	
Total search	1.5 billion EUR	15-20%

Source: own elaboration¹⁷³

Section 5 analyses the impact of such high concentration on the state of competition in the online advertising sector.

4.2. Display advertising

The display advertising market in Spain accounts for about €1.95 billion, as shown in Table 4. In the period 2017 to 2019, this segment could have grown by over 20% annually, gaining relative weight compared to search advertising. For descriptive purposes, display advertising is usually divided into two components based on the degree of intermediation¹⁷⁴.

- On the one hand, the inventory of platforms that trade their own space¹⁷⁵ accounts for some €1.15 billion, almost 60% of display and a third of the total online advertising market. It is growing at annual rates that may exceed 25%, gaining relative weight, both in display (in relation to open display) and in the market total (in relation to search).
- On the other hand, the inventory of medium-sized publishers (mainly traditional publishers such as print media, radio and TV that have migrated to digital) or small publishers (such as mobile applications or small audience websites), which use intermediaries to trade their inventory, the open display, accounts for around €800 million. This is more than 40% of display and more than a fifth of the total online

¹⁷³ Estimates based on operators' statements.

¹⁷⁴ See section 3.2.

¹⁷⁵ Following standard practice (CMA, 2020, p. C57), platforms such as Verizon (Yahoo) that do trade their inventory via third-party intermediaries are included in open display. Spotify has actually been considered because, although it has opened its ad inventory to open display, most of it is contracted under its own intermediation model (according to the information provided by the operators).

advertising market. It is growing at annual rates of between 10% and 20%, which means that it is losing relative weight in relation to platform revenue¹⁷⁶.

Table 4. Estimates of the display advertising market in Spain (2019)

Segment	Market size	% of <i>display</i>	% of total	Annual estimated growth 2017-2019
Platforms	1.15 € billion	58-59%	33-34%	> 25%
Open <i>display</i>	0.8 € billion	41-42%	23-24%	10-20%
Total <i>display</i>	1.95 € billion	100%	56-57%	> 20%

Source: own elaboration¹⁷⁷

Platform advertising inventory is highly concentrated (as shown in Table 5) and Facebook (including Instagram) can exceed 40% of total display¹⁷⁸. Neither of the next two platforms (Amazon, Google-YouTube) exceeds 10% of total display.

¹⁷⁶ As it is happening in other geographic areas. See section 3.2.

¹⁷⁷ Estimates based on statements from operators and information provided by advertisers, agencies and publishers.

¹⁷⁸ These figures are analogous (somewhat lower) to those obtained for other countries such as the United Kingdom (CMA, 2020) and Australia (ACCC, 2019). In the UK, Facebook's share could be even higher in video format.

Table 5. Estimated distribution of the display advertising market in Spain (2019)

Company	Market share and size	Annual estimated growth 2017-2019
Platforms	1.15 €billion (58-59%)	> 25%
Facebook	> 40%	Slight increase
Amazon	< 10%	
Youtube	< 10%	
Twitter	< 5%	
Spotify	< 5%	
Linkedin	< 5%	
Snapchat	< 5%	
Pinterest	< 5%	
Other	< 5%	
Rest of <i>Open Display</i>	0.8 €billion (41-42%)	10-20%
Total display	1.950 M€	> 20%

Source: own elaboration¹⁷⁹

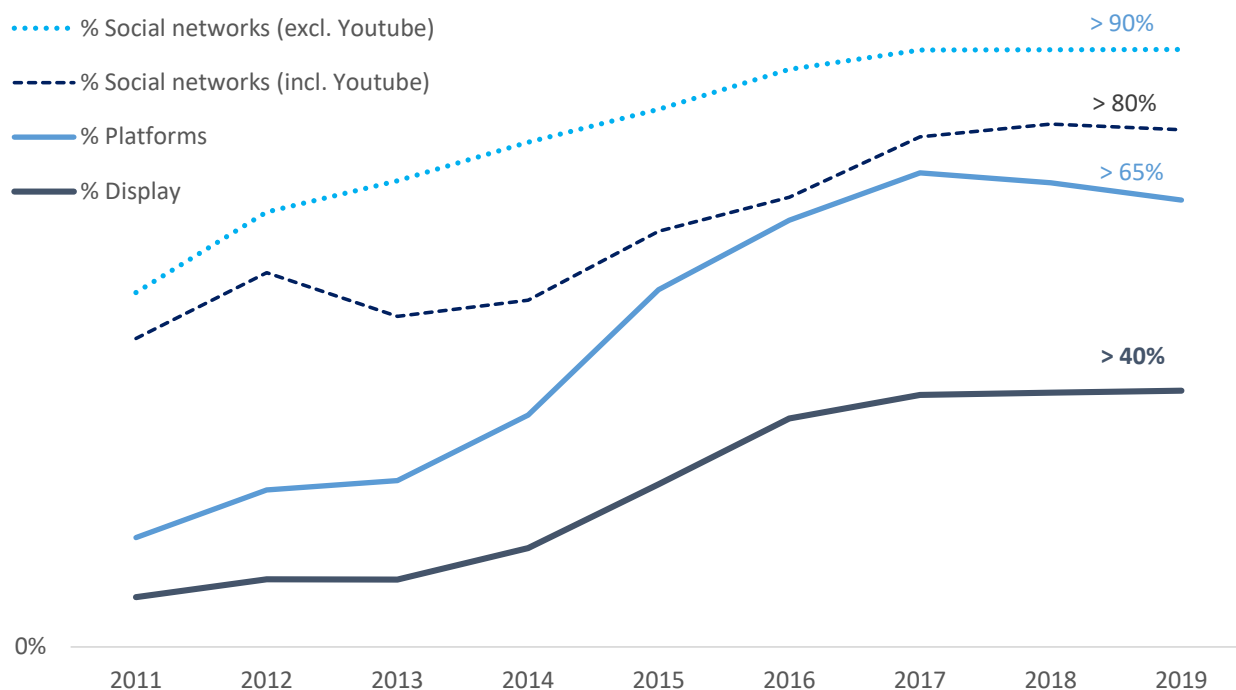
Given that the platform subtotal is growing faster and is relatively more concentrated, it is interesting to zoom in on it. Figure 22 shows the relevance of Facebook, with a share of over 65% of the €1.15 billion channelled by the platforms, exceeding 80% or 90% in social media.

In social media advertising, Facebook's market share was not as large at the beginning of the series (2011), where it still rivalled Tuenti. The quick disappearance of this social media in 2016 (even if more factors converged) shows the difficulty for platforms to grow without a global audience.

On the other hand, the fact that Facebook's market power is declining in platform totals (but not in social media) suggests Amazon's recent strength, since the latter is not considered within social networks but it is actually included in platform totals.

¹⁷⁹ Estimates based on operators' statements and information provided by advertisers and agencies.

Figure 22. Estimated evolution of Facebook's market share in display advertising



Source: own elaboration¹⁸⁰

In the €800 million of open display, there is less concentration in terms of publishers. Medium to large publishers (such as the main online newspapers and TV and radio channels) coexist with other smaller publishers (such as niche websites, small audience blogs and mobile apps).

Where there is indeed concentration in open display is in intermediation services, which we will analyse below.

4.3. Open display intermediation

Several intermediaries are engaged in the purchase and sale of advertising space¹⁸¹: advertiser ad servers (AAS), buying tools for advertisers/agencies such as DSPs (Demand

¹⁸⁰ Estimates based on operators' declarations in the last 3 years and extrapolation with the information available from advertisers and agencies in previous years.

¹⁸¹ See section 3.2. for a detailed explanation of their role.

Side Platforms), sales tools for publishers such as SSPs (Supply-Side Platforms and Exchanges) and ad Networks, and, finally, publisher ad servers (PAS). In this section, we will discuss each of these activities with a common pattern: Google's large share in each and every one of them. At the end of this section, we will provide a cost estimate for these intermediation services.

4.3.a. Advertiser Ad Servers (AAS)

Advertisers and agencies need servers to store ad orders¹⁸² so that they can run campaigns in different media depending on their negotiations with the other side of the market (the publishers). Therefore, they need servers for most of their ads¹⁸³, either those negotiated directly with publishers through traditional insertion orders (IOs) or through other ad buying tools such as DSPs or ad networks that link to different media¹⁸⁴.

As Table 6 shows, this is an extremely concentrated sector, with Google capturing more than 70% of revenues. These figures are analogous¹⁸⁵ to those obtained for other countries such as the United Kingdom (CMA, 2020, pp. 266-267), Australia (ACCC, 2021, pp. 97-98) or France (AdIC, 2018, p. 86).

¹⁸² Servers also have other purposes such as measuring or tracking functionalities that allow certain management (for example, regulating the frequency of an ad being displayed on a medium or to a user), although not as sophisticated as DSPs.

¹⁸³ Except for very specific formats or campaigns.

¹⁸⁴ Except for networks (such as Google Ads or Facebook Audience Network) that offer an end-to-end service and are part of the work of the server (although they do not have the flexibility to display ads outside their network).

¹⁸⁵ In the case of Spain, the figures obtained are somewhat lower than those of the United Kingdom and Australia, but in these countries, weight was estimated in impressions (number of times an ad appears, which includes ads managed by Google Ads, which integrates the server) rather than revenue.

Table 6. Estimated distribution of AAS revenue market share (2019)

Company	Market share	Annual estimated growth 2017-2019
Google	> 70%	Increase
Amazon-Sizmek	< 20%	
Weborama	< 10%	
Adform	< 5%	
Flashtalking	< 5%	
Innovid	< 5%	
Other	< 5%	

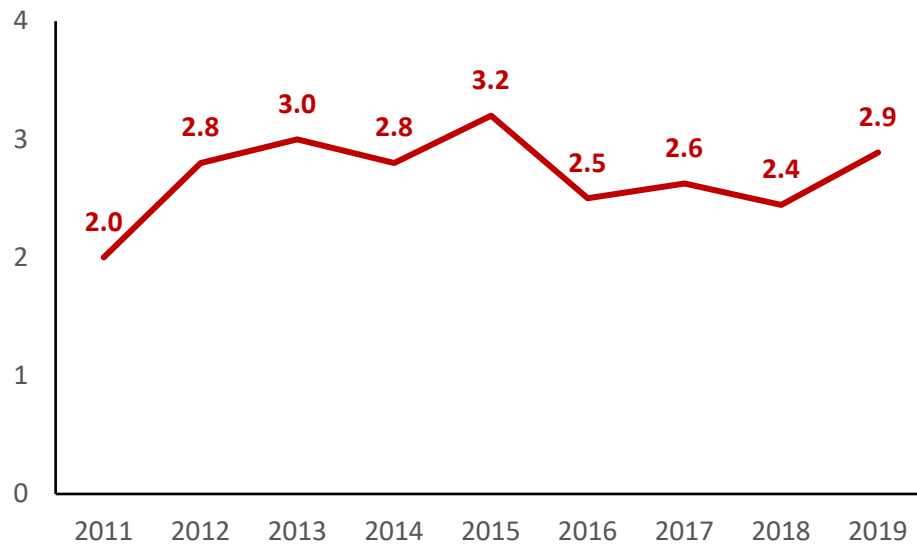
Source: own elaboration¹⁸⁶

The general practice among advertisers in Spain is to choose a single advertiser ad server, in line with what other studies indicate (ACCC, 2021, p. 43). Agencies, by bringing together the demand of multiple advertisers, usually have more than one server, since each advertiser can determine to contract its preferred server (given the relevance of the server data for the advertiser¹⁸⁷). On average, agencies keep approximately three advertiser ad servers, a number that has remained relatively stable in the last few years.

¹⁸⁶ Estimates based on information provided by operators, agencies and advertisers.

¹⁸⁷ Some advertisers may even choose to contract the server by themselves, even if the campaigns are run by the agency.

Figure 23. Average number of advertiser ad servers used by agencies



Source: Own elaboration¹⁸⁸

In this market with few suppliers, changes are infrequent. The number of advertiser ad servers contracted by agencies is usually between two and five. Google's server (Google Campaign Manager) is absolutely widespread, while other competitors have recently lost some contracts.

Section 5.1.b discusses the role of this concentration and other possible factors (such as possible switching costs or the role that integration with other services such as DSPs may play) that affect the decision to contract the advertiser ad server.

4.3.b. DSPs and other ad buying tools for advertisers and agencies

In order to take advantage of the full potential of online advertising, advertisers and agencies need buying tools that allow them to place their campaigns in multiple media and reach as much of their target audience as possible.

Because of their high degree of sophistication¹⁸⁹, DSPs are tools commonly used by major advertisers and agencies. As Table 7 shows, this is also a highly concentrated sector, with

¹⁸⁸ Estimates based on information provided by operators, agencies and advertisers.

¹⁸⁹ In terms of connection to multiple media in real time, audience profiling, information on campaign performance, etc.

Google capturing more than 60% of revenues, although its weight may have declined slightly in the last three years. These figures are similar to (and somewhat higher than) those obtained for other countries such as the United Kingdom (CMA, 2020, pp. 267-268).

Table 7. Estimated distribution of DSPs revenue market share (2019)

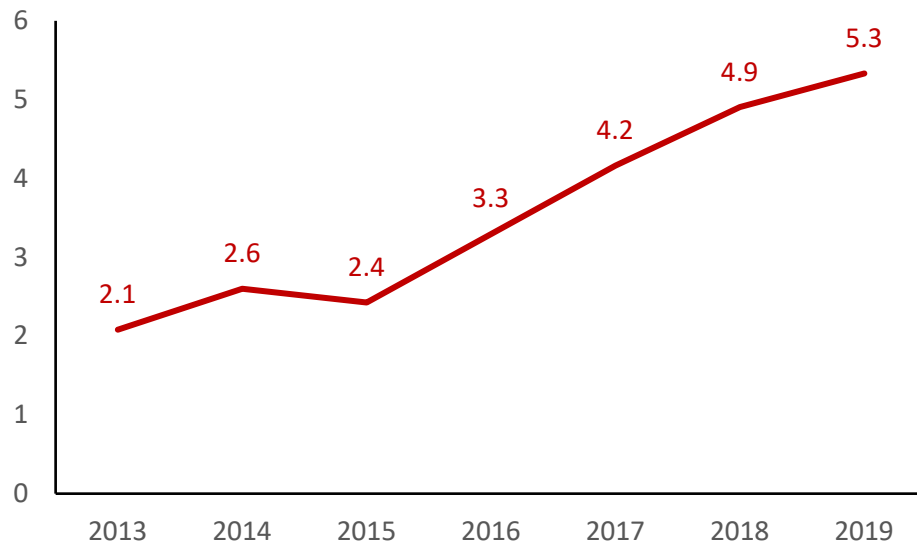
Company	Market share	Estimated evolution 2017-2019
Google (DV360)	> 60%	Slight decrease
The Trade Desk	< 20%	
Amazon	< 20%	
Adobe	< 10%	
Xandr-AppNexus	< 5%	
MediaMath	< 5%	
Verizon	< 5%	
TapTap (Sonata)	< 5%	
Other	< 5%	

Source: own elaboration¹⁹⁰

Despite this concentration, the number of DSPs used by agencies in Spain is increasing and is currently averaging around five, as Figure 24 shows. Advertisers in Spain, however, tend to opt for a single DSP, especially if contracted directly, in line with what other studies indicate (ACCC, 2021, pp. 43-44). In the framework of information requirements, some agencies have pointed out to the CNMC that it is increasingly common for advertisers to contract the DSP by themselves in order to have direct access to the DSP's data and have more direct management (using the agency merely to purchase space through ad networks or direct agreements with publishers). The use of Google's DSP (DV360, Display & Video 360) is widespread in both cases (agencies and advertisers).

¹⁹⁰ Estimates based on information provided by operators.

Figure 24. Average number of DSPs used by agencies



Source: Own elaboration¹⁹¹

We can consider other ad buying tools available for advertisers and agencies (AdIC, 2018, p. 25; CMA, 2020, p. M46) that offer an end-to-end solution to link to the publisher space (submitting bids on their server through header bidding or open bidding systems). These include Google Ads (a tool that allows purchasing display space, in addition to Google's own inventory, in a network of third-party spaces linked to Google Display Network¹⁹²), Facebook Audience Network (FAN, a tool that allows purchasing display space, in addition to Facebook's own inventory, in a network of non-Facebook spaces, usually publishers' mobile apps) and Criteo (a retargeting specialist, although not strictly a DSP).

Table 8 shows that Google's market share remains above 60% and is, in this case, slightly increasing, confirming the strength of Google Ads as a buying tool (especially attractive for small advertisers). These figures, once again, are similar¹⁹³ to those obtained for other

¹⁹¹ Estimates based on information provided by operators.

¹⁹² The Google Display Network is a network of third-party spaces that connect to Google's trading tools for publishers so that advertisers or agencies using Google Ads can also bid to buy space on these third-party properties.

¹⁹³ Estimates for the United Kingdom and Australia do not include the Facebook Audience Network in this specification.

countries such as the United Kingdom (CMA, 2020, pp. 267-268) or Australia (ACCC, 2021, p. 100).

Table 8. Estimated distribution of DSPs and ad buying tools revenue market share (2019)

Company	Market share	Estimated evolution 2017-2019
Google Ads y DV360	> 60%	Slight increase
Criteo	< 20%	
Facebook (FAN)	< 10%	
The Trade Desk	< 10%	
Amazon	< 10%	
Adobe	< 5%	
Xandr-AppNexus	< 5%	
MediaMath	< 5%	
Verizon	< 5%	
TapTap (Sonata)	< 5%	
Other	< 5%	

Source: own elaboration¹⁹⁴

However, FAN and Criteo are also considered sales tools by publishers because of how they work. We are going to examine below these tools that enable publisher space monetization.

4.3.c. SSPs and other sales tools for publishers

For monetization of their inventory, SSPs (which generally integrate ad exchange tasks to connect directly to DSPs) are the most flexible option for medium to large publishers in terms of their sophistication and interconnection with demand in real-time.

For generalist SSPs (which are not specialized in a particular format), Table 9 shows that Google's SSP/Exchange (AdX) has a relevant share of above 70% of revenues, although with an estimated slight decrease in this relative weight in recent years. These figures are analogous (somewhat higher) to those obtained for other countries¹⁹⁵ such as the United Kingdom (CMA, 2020, pp. 266-267) and Australia (ACCC, 2021, pp. 97-98).

¹⁹⁴ Estimates based on information provided by operators.

¹⁹⁵ In these countries, weights of around 50-60% are obtained.

Table 9. Estimated distribution of generalist SSPs revenue market share¹⁹⁶

Company	Market share	Estimated evolution 2017-2019
Google (AdX)	> 70%	Slight decrease
Xandr-AppNexus	< 10%	
Magnite-Rubicon	< 10%	
Smart AdServer	< 10%	
Rich Audience	< 10%	
Verizon	< 10%	
Index Exchange	< 5%	
Freewheel	< 5%	
OpenX	< 5%	
Other	< 5%	

Source: own elaboration¹⁹⁷

In addition to generalist SSPs, there are SSPs that specialize in a particular format such as video¹⁹⁸ (Teads, SpotX, Adman). Some publishers consider them SSPs and others ad networks. We also include in this area other players traditionally classified as ad networks (such as Seedtag, SunMedia and Smartclip) but which have a hybrid model, being able to carry out programmatic sales as SSPs or direct sales. Although, for these purposes, we only consider their revenues from programmatic sales. Table 10 shows that Google maintains a weight above 50% of revenues, although it is also estimated that its relative weight has slightly decreased in recent years.

¹⁹⁶ Many publishers have included Amazon as a SSP in their responses to the CNMC, although Amazon is not strictly a SSP but a provider of header bidding services. In any case, including it would not distort the estimated shares shown in the table.

¹⁹⁷ Estimates based on information provided by operators and publishers.

¹⁹⁸ For example, outstream video, which are video ads that can be loaded even if the content is not video (as opposed to instream video, which are video ads in video content).

Table 10. Estimated distribution of all SSPs revenue market share

Company	Market share	Estimated evolution 2017-2019
Google (AdX)	> 50%	Slight decrease
Teads	< 10%	
Xandr-AppNexus	< 10%	
Magnite-Rubicon	< 10%	
Smart AdServer	< 10%	
Rich Audience	< 10%	
Verizon	< 10%	
SpotX	< 10%	
SunMedia	< 10%	
Adman	< 10%	
Smartclip	< 5%	
Seedtag	< 5%	
Index Exchange	< 5%	
Freewheel	< 5%	
OpenX	< 5%	
Other	< 5%	

Source: own elaboration¹⁹⁹

Apart from SSPs, another trade option for publishers are ad networks, to which inventory can be reserved or which can trade directly on behalf of the publisher (charging a brokerage fee) even when they do not buy (as such) the inventory. Native advertising formats, where Taboola and Outbrain (which bought another specialist in this format, Ligatus) stand out, also operate as networks. Other tools, such as the Facebook Audience Network (FAN, used by publishers to monetize their mobile applications) and Criteo (specialized in retargeting), also operate, in general, as networks (although some publishers classify them as SSPs).

On the other hand, there are ad networks more geared towards monetizing lower demand inventory, either from large publishers (such as inventory to other geographic areas, highlighting HEX²⁰⁰) or small ones, like Google AdSense (for small audience websites such as blogs or niche content) and Google AdMob (for mobile applications).

¹⁹⁹ Estimates based on information provided by operators and publishers.

²⁰⁰ Hispanic Exchange (HEX) specializes in monetizing inventory to certain geographic areas such as the Americas. Although the ideal criterion for describing the market is to include only ads that impact Spanish

Table 11 adds these other sales tools to the SSPs. In addition, for those players using a hybrid model (Seedtag, SunMedia or Smartclip, for which Table 10 only considered programmatic sales), Table 11 considers their total revenues (not only from programmatic sales as SSPs but also from their direct sales).

Table 11 shows that Google, with its three tools for selling publishers' space (AdX, AdSense and AdMob), retains a weight above 50% (although it also seems to be decreasing slightly), in very similar figures to those estimated in other countries such as the United Kingdom (CMA, 2020, pp. 268-269) and Australia (ACCC, 2021, pp. 107-108).

users, the fact that not all agents disassociate this data has led them to including it, although the figures are not very relevant and do not distort the conclusions.

Table 11. Estimated distribution of SSPs and ad networks revenue market share

Company	Market share	Estimated evolution 2017-2019
Google AdX, AdSense, AdMob	> 50%	Slight decrease
Criteo	< 10%	
SunMedia	< 10%	
Smartclip	< 10%	
Facebook (FAN)	< 10%	
Teads	< 10%	
Taboola	< 10%	
Xandr-AppNexus	< 5%	
Magnite-Rubicon	< 5%	
Smart AdServer	< 5%	
Outbrain-Ligatus	< 5%	
Seedtag	< 5%	
Rich Audience	< 5%	
Seedtag	< 5%	
Verizon	< 5%	
SpotX	< 5%	
Adman	< 5%	
Antevenio	< 5%	
HEX	< 5%	
Index Exchange	< 5%	
Freewheel	< 5%	
OpenX	< 5%	
Other	< 5%	

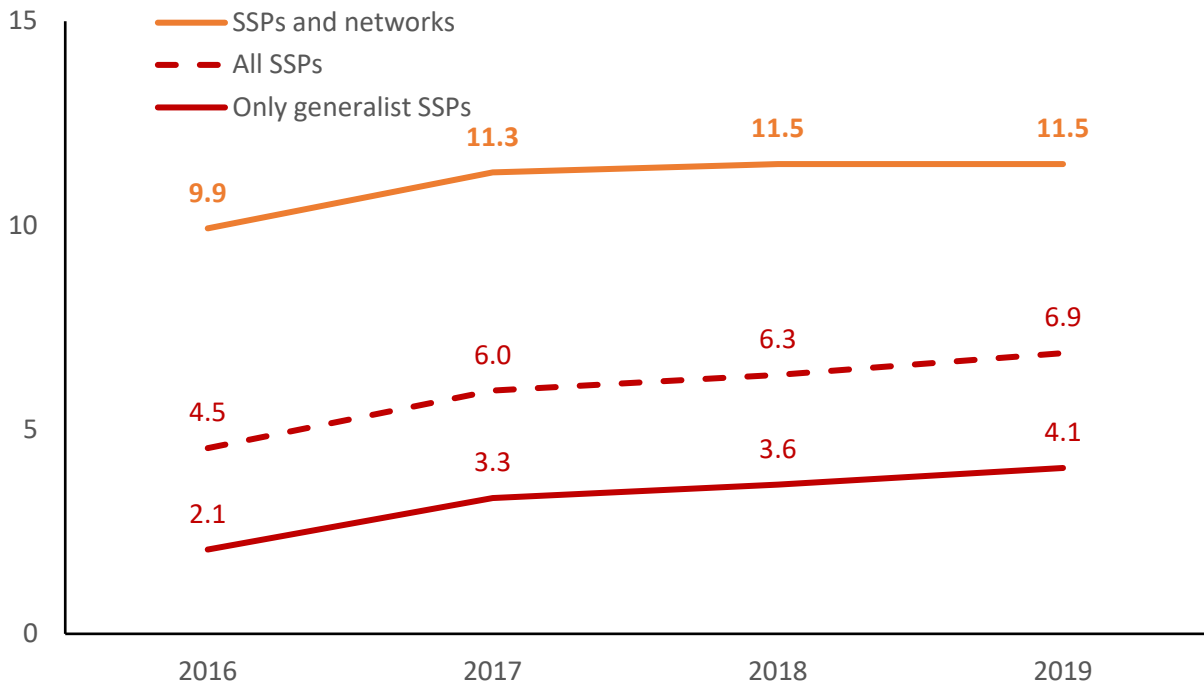
Source: own elaboration²⁰¹

As Figure 25 shows, the number of tools is increasing among (medium-large size) publishers using programmatic advertising. Almost seven SSPs are used on average, four of which are generalist²⁰² (these figures tend to be higher for large publishers).

²⁰¹ Estimates based on information provided by operators and publishers.

²⁰² See also *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet* (¶ 273), where approximately 10 SSPs per publisher are estimated in France.

Figure 25. Average number of sales tools used by medium-large publishers



Source: own elaboration²⁰³

Finally, the last avenue for publishers to trade would be by negotiating directly with advertisers and agencies with traditional insertion orders. However, this channel is losing relative weight. According to CNMC data, it is estimated that pure programmatic sales²⁰⁴ in SSPs/Exchanges account for approximately 35% of open display and are growing in relative weight. Traditional insertion orders account for over 30% of open display but falling in relative weight. The rest (also with a relative weight above 30%) are sales through ad networks, where direct buying and selling models persist (similar to traditional insertion orders), although the most relevant models do have an important programmatic layer based on data.

In any case, even in direct sale and purchase models, although intermediaries (such as SSPs or networks) are not required, servers are still needed. We are going to analyse publisher ad servers next.

²⁰³ Estimates based on information provided by operators.

²⁰⁴ See section 3.3.c.

4.3.d. Publisher Ad Servers (PAS)

Publishers need servers to manage their inventory, order incoming bids and link to the advertiser's server to ensure that the ad is displayed²⁰⁵. Therefore, publishers need servers for most of their inventory²⁰⁶.

There are certain formats, such as native advertising, that can operate in a network and incorporate the work of the server. Other generalist ad networks (such as SunMedia, Smartclip and Seedtag) can add server services, but they will contract them from the specialized companies listed below.

As Table 12 shows, this is an extremely concentrated sector, with Google capturing over 70% of revenues. These figures are similar²⁰⁷ to those obtained for other countries such as the United Kingdom (CMA, 2020, pp. 266-267) and Australia (ACCC, 2021, pp. 97-98).

Table 12. Estimated distribution of PAS revenue market share (2019)

Company	Market share	Estimated evolution 2017-2019
Google	> 70%	Slight increase
Smart AdServer	< 20%	
Freewheel	< 10%	
Xandr-Appnexus	< 5%	
Other	< 5%	

Source: own elaboration²⁰⁸

As Figure 26 shows, among publishers that use a server (medium-large size), the number of tools used shows a slight decline, with an average of 1.4. In other words, the most common practice among publishers in Spain is to choose a single server, in line with other

²⁰⁵ Servers also have other functions such as measuring and providing data on ad interaction.

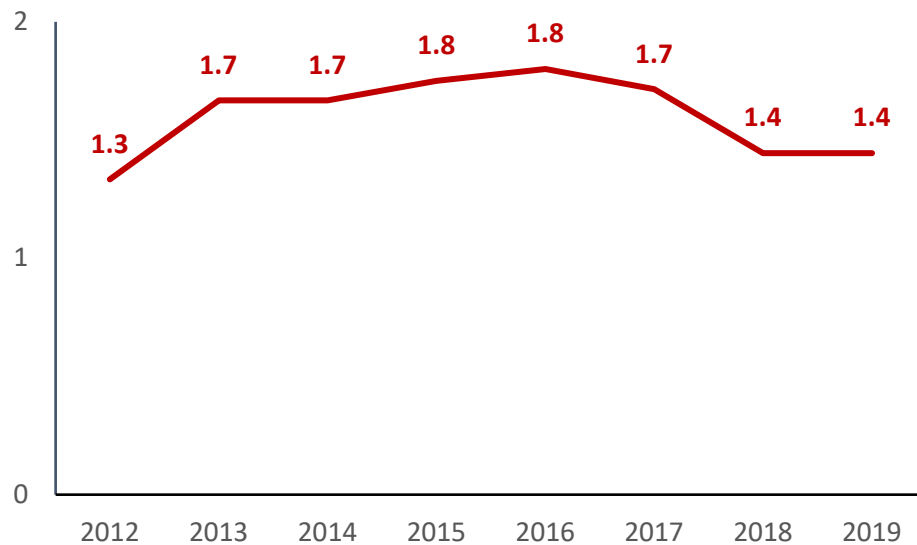
²⁰⁶ Except for very specific campaigns, negotiated on an *ad hoc* basis, or native advertising and promoted content (branded content).

²⁰⁷ In the case of Spain, figures are somewhat lower than in the UK and Australia, but in these countries market share has been estimated in impressions (number of ad appearances) instead of revenues. See also *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet* (¶ 321), which obtains a 60% to 70% revenue market share for France.

²⁰⁸ Estimates based on information provided by operators and publishers.

international studies and (ACCC, 2021, pp. 45-46) analyses²⁰⁹. Switching to an alternative provider is not frequent and, when it has occurred recently, it has been to Google.

Figure 26. Average number of ad servers used by medium-large publishers



Source: own elaboration²¹⁰

In conclusion, intermediation services in open display are highly concentrated. We will now assess to what extent this may have an impact on the cost of intermediation.

4.3.e. The cost of open display intermediation

Using aggregate estimates from the data obtained to describe the market, we can estimate the following average intermediation services costs:

- The cost of the advertiser ad server may be below 3% of the amount invested. It is estimated that this service is getting relatively cheaper (it was around or above 4% three years ago).

²⁰⁹ See *Decision of the Competition Authority n° 21-D-11 of 7 June 2021 on practices implemented in the Internet advertising sector* (¶ 45-47; 273).

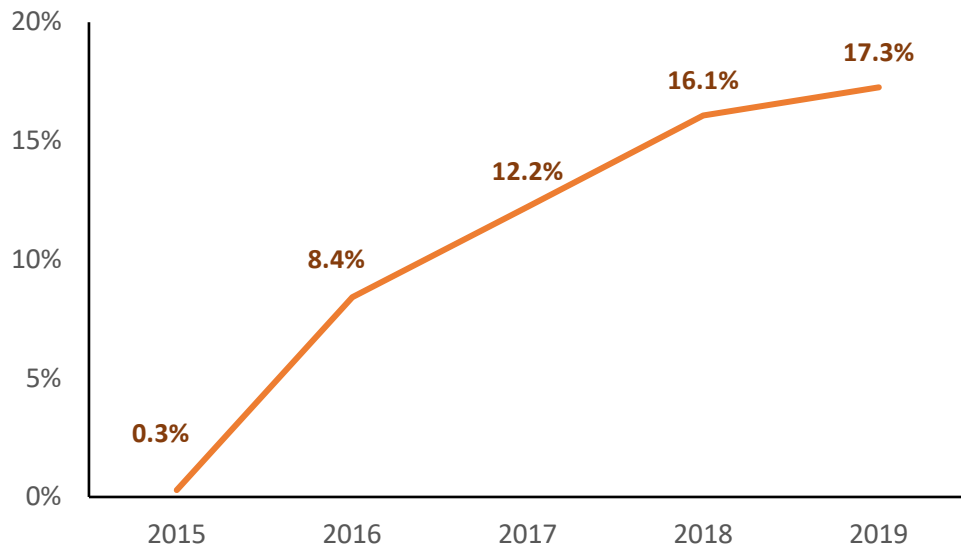
²¹⁰ Estimates based on information provided by operators.

- The cost of the publisher ad server may be below 2% of the amount managed. It is estimated that this service is becoming relatively cheaper (it was around or above 3% five years ago).
- The cost of DSP may be around 15% of the amount invested. DSPs provide a wide variety of services based on the preferences of agencies and advertisers, which generates a wide range of fees applied.
- The cost of sales tools depends on the type used:
 - Instruments that operate with a network-type scheme (ad networks, which save the publisher a greater sales effort) have a remuneration between 20% and 40%²¹¹ of the amount to be received by the publisher.
 - SSPs usually carry a fee²¹² depending on whether they manage deals, private marketplaces (PMPs) or open auctions. In aggregate terms, it is estimated that the cost of SSP service is around 13% to 15% of the amount to be received by the publisher, and it may have risen in the last three years. In principle, this fee should become lower as the programmatic advertising market develops and deepens. However, despite the increased share of programmatic advertising (see end of section 4.3.c), the fee has not become relatively cheaper. At the same time, this net cost of SSPs should also, in theory, be lower as the share of deals and PMPs increases in relation to open auctions. However, despite the increase in deals and PMPs (which account for almost 20% of programmatic sales by medium and large publishers, as shown in Figure 27), the fee has not become relatively cheaper.

²¹¹ For example, Google publishes its 32% remuneration scheme in AdSense. See <https://support.google.com/adsense/answer/180195?hl=en>

²¹² See section 3.3.c. This range is due to the fact that open auctions save the publisher more work, which justifies a higher remuneration for the SSP/exchange platform, while PMPs, and especially deals, still require some sales and management effort (thus the remuneration for the SSP/exchange platform is lower).

Figure 27. Deals and PMP (% of programmatic sales of medium and large publishers)



Source: Own elaboration²¹³

Therefore, there is a gap of around 30-35% between what an advertiser pays and what a publisher receives²¹⁴. This gap may be greater if ad networks are used (because sometimes these are also connected to ad exchanges), so the net cost can be higher for small advertisers and publishers (that use the ad network model relatively more than the DSP and SSP programmatic tools). In addition, small publishers sometimes use large publishers to trade their supply, which entails an additional fee.

This gap is not a problem *per se*. Technology intermediaries also perform value-added work that deserves remuneration²¹⁵. The problem would be if this remuneration were to signal competition problems in the market. We will, therefore, analyse specific competition issues that may arise in online advertising in the following section.

²¹³ Estimates based on information provided by operators.

²¹⁴ Without factoring in the remuneration of the agency or other players (such as data analytics or verification tools).

²¹⁵ See section 3.4.b.

5. Specific competition issues in online advertising

This section reviews possible competition issues that may arise in the online advertising sector. To this end, we have used the different sources available to the CNMC²¹⁶, supplementing the information provided by operators (in requests for information, meetings and public consultations) with analysis from other institutions and experts.

These potential competition issues have been divided into two groups: (i) structural features that can, to some extent, be considered inherent to the sector and (ii) possible specific risks to online advertising in relation to competition among its operators.

5.1. Structural features affecting competition

5.1.a. Complex dynamics of competition and integration of services

Throughout the report, we have already pointed out the complex dynamics of this sector, which can affect competition in different ways.

First, this is a **multi-sided market**, where platforms and publishers (exploiting indirect network externalities) link advertisers and audiences, with interdependent demands. One side's position (e.g., in terms of audience acquisition and the conditions applied in relation to ad load or data accumulation) cannot be easily disentangled from the other side's (e.g., the share in advertiser spending and the price charged to them). In general, an operator wishing to be competitive will have to be competitive on both sides.

In terms of **capturing audiences**, variables of competition may have to do with the quality of publisher content relative to **ad load and data**, this latter aspect being difficult for consumers to assess when making optimal decisions. Envelopment and ecosystem strategies by linking advertising to numerous adjacent services increase the time consumers spend on certain platforms. This may make them more reluctant (sticky) to switch, especially if we take other consumer behavioural biases into account, such as their preferences for default options or for short-term prizes in the form of service integration (Crémer, de Montjoye, & Schweitzer, 2019).

²¹⁶ See section 1.

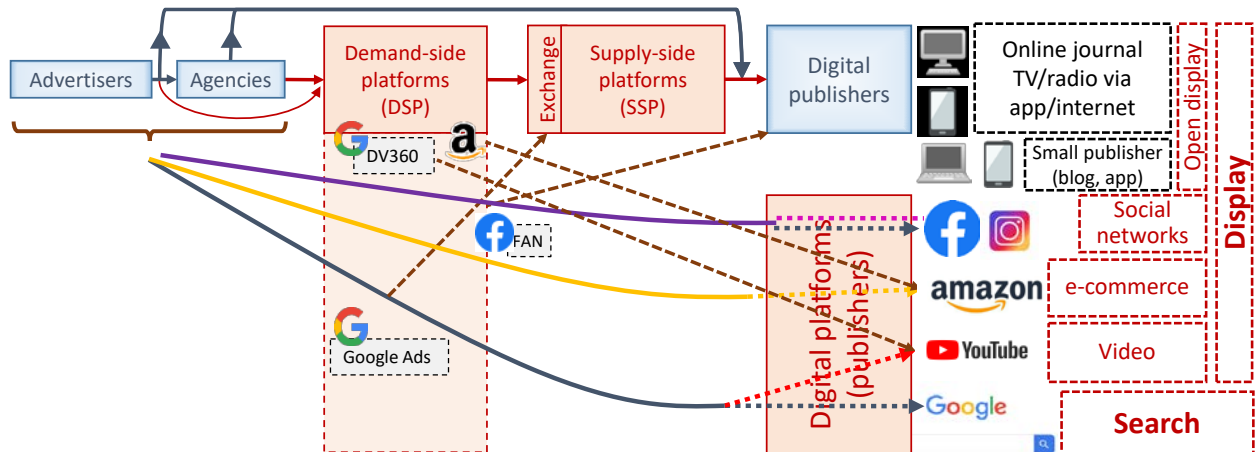
Very different business models coexist in online advertising. On the one hand, most global audience platforms trade their own space²¹⁷. On the other, the rest of publishers use intermediaries to trade their inventory in the open display. This makes it difficult to compare prices and other conditions, given the different degrees of intermediation and fragmentation of the value chain. The issue becomes even more complicated if we consider that some relevant platforms (as publishers with global audiences) are also involved in this intermediation, especially Google, followed by Amazon and Facebook (as shown in Figure 28). Their DSPs or ad buying tools combine exclusive access to their own attractive inventory with the opportunity to access third-party space. In other words, they can combine inventories that are in the same horizontal link of the chain (end publisher), although with a vertical impact on the distribution of funds along the value chain:

- Google's case is particularly remarkable. Its Google Ads platform uniquely combines access to (its own) search inventory²¹⁸ and to display spaces. And, within display, it combines access to YouTube's ad inventory (highly relevant in video) and third-party inventory linked to the Google Display Network (GDN). It could be considered a DSP (CMA, 2020, p. 266) or a network (ad network but on the demand side) for small advertisers, although it is also used by agencies and larger advertisers (precisely because it is the only gateway to search inventory). Apart from Google Ads, we can add the Google DV 360 pure DSP geared towards agencies and large advertisers, which combines, with real-time flexibility, access to the display segment of YouTube's and third-party ad inventory (connecting to multiple Exchanges/SSPs, not only in Google AdX).
- Facebook manages a display component similar to Google Ads by combining access to its own inventory (Facebook) with third-party space adhering to the Facebook Audience Network (although this focuses on mobile inventory and does not have as much capillarity as the Google Display Network).
- Amazon, with its DSP, has similar dynamics to Google DV 360 by offering that real-time flexibility for access to Amazon's own inventory or third-party spaces that can be accessed on Exchanges/SSPs.

²¹⁷ Some mid-size platforms such as Verizon (Yahoo) do trade their inventory via third-party intermediaries (CMA, 2020, p. C57).

²¹⁸ It also includes access to Gmail.

Figure 28. Examples of some platforms participation in intermediation



Source: Own elaboration

Agents' (both **advertisers' or agencies'** and **publishers'**) decision-making is also complex due to other specificities of the advertising intermediation sector. Hybrid models regarding in terms of **vertical integration of services** makes it difficult to compare service providers:

- Some platforms, Google being the most relevant, but also others such as Xandr (CMA, 2020, p. M45;M56) operate both as DSP and SSP.
- SSPs show an increasing degree of integration with exchanges²¹⁹, although this is not the case for all players (there are SSPs that still need an intermediary to connect to the demand on the other side of the market coming from the DSPs). This complicates not only the allocation of funds to the different activities (for players integrating SSPs or exchange), but also the assessment of current or potential competition.
- Ad networks (an alternative to SSPs for the sale of inventory²²⁰) can both connect to exchanges and deal directly with agencies/advertisers.
- There is also some service integration in other areas. For example, it is common for DSPs to integrate advertiser ad server (AAS), DMP or audience verification and attribution services. SSPs can also include DMP services (CMA, 2020, pp. M56-M67), but integration with publisher ad servers (PAS, as in the case of Google) and

²¹⁹ See section 3.2.

²²⁰ See section 3.2.

intermediate solutions (as in the case of Google or Index Exchange, which allows the server to order bids from SSPs with open bidding or header bidding systems) is particularly noteworthy.

Finally, the **complexity** (in terms of volume, remuneration, billing schemes and types of transactions²²¹) and **opacity of programmatic advertising** makes it difficult to compare prices and other conditions.

All these issues generate **complex competitive dynamics** and, in particular, a trend towards **combining services** that benefit operators with a certain degree of integration along the value chain. Therefore, as part of its request for information, the CNMC has inquired operators about their view on service integration²²².

On the **demand side**, the following conclusions can be drawn:

- Around 75%-80% of advertisers and agencies surveyed value contracting a DSP or an ad buying tool that includes access to platforms' own inventory (something that only Google DV 360 DSP, Amazon DSP and Facebook Audience Network do) or even that includes access to search and display inventory (something that only Google Ads does). This view on the relevance of platforms' own ad inventory is shared by 60% of the intermediaries and platforms surveyed.
- Around 85% of advertisers and agencies surveyed consider that it is relevant, in terms of contracting, that the DSP integrates data analytics services (DMP), an opinion shared by 2 out of 3 intermediaries or platforms.
- More than 90% of advertisers and agencies surveyed consider it relevant for the DSP to be connected to a vertically integrated SSP, an opinion shared by 2 out of 3 intermediaries or platforms. Aspects such as better interoperability (in terms of cookie matching or latency) play an important role.
- Other aspects are less relevant, such as DSP and AAS integration (pointed out by less than 50% of advertisers/agencies and by 20% of intermediaries or platforms) or the

²²¹ For example, DSPs charge a fee per transaction, in addition to a percentage per volume of expenditure, but both can vary for services provided to the client (e.g., guarantees, management or strategy). On the other hand, SSPs charge a percentage based on the type of transaction, whether in an open auction or a closed market or agreement (see section 3.3.c).

²²² The impact of some of these issues (such as the relevance of the own ad inventory, the combination of services or vertical integration) in terms of competition is discussed in more detail when describing specific risks (see section 5.2).

possibility that the AAS also operates on the other side of the market as a PAS (pointed out by 1 out of 4 advertisers/agencies and by 40% of intermediaries or platforms).

On the **supply side**, we can draw the following conclusions:

- More than 60% of the publishers surveyed consider it relevant when contracting the SSP the integration of data analytics services, an opinion shared by more than half of the intermediaries or platforms.
- Almost 90% of the publishers surveyed consider the integration between SSP and PAS to be relevant, an opinion shared by 2 out of 3 intermediaries or platforms. They emphasize aspects such as lower latency, higher performance (due to greater integration between direct and programmatic sales), better information supply and operational simplicity.
- Almost all publishers consider a SSP connected to a vertically integrated DSP a key factor (an opinion also shared by most intermediaries/platforms and advertisers/agencies). Again, aspects such as better interoperability (in terms of cookie matching or latency) in accessing demand sources are emphasized.
- Most publishers (almost 90% of those surveyed) do value the possibility of a PAS operating on the other side of the market as an AAS (although this is only considered relevant by 1 out of 4 advertisers/agencies and by 40% of intermediaries/platforms). Publishers point out that this reduces discrepancies in tracking campaigns (an important aspect for remuneration) and simplifies operation.

Figure 13 summarizes the above-mentioned information on the assessment by different groups of agents of the relative relevance of integrating different services.

Figure 13. Agents' assessment of the relevance of service integration

% OF SURVEYED AGENTS THAT CONSIDER RELEVANT THE INTEGRATION OF SERVICES			
Integrated services	Advertisers and agencies	Platforms and intermediaries	Publishers
DSP and owned inventory	~ 75%	~ 60%	n.a.
DSP - DMP	~ 85%	~ 67%	n.a.
DSP - SSP	~ 90%	~ 67%	> 90%
DSP - AAS	~ 40%	~ 20%	n.a.
AAS - PAS	~ 25%	~ 40%	~ 90%
SSP - DMP	n.a.	~ 50%	~ 60%
SSP - PAS	n.a.	~ 67%	~ 90%

Source: own elaboration²²³

This trend toward integration may also be fuelled by other dynamics that lead to concentration, which we examine below.

5.1.b. Trends to Concentration

The online advertising sector shows a remarkable tendency towards concentration²²⁴. From the estimates obtained for Spain, similar to (somewhat lower than) those for other countries such as the United Kingdom²²⁵ (CMA, 2020, p. 9), two operators, i.e., Google and Facebook, may exceed 70% of the market share.

Beyond the overall market concentration, their shares in different segments²²⁶ must be considered, differentiating the platforms' work as publishers from their intermediation work.

Search advertising is a highly concentrated sector, where the main platform (Google) accounts for over 90% of the market in Spain, very much in line with other countries²²⁷.

²²³ Data based on the information provided by agents in the framework of the information requests.

²²⁴ See section 4 for a more detailed explanation of the figures in Spain.

²²⁵ In the UK, Google and Facebook's share is estimated around 80%.

²²⁶ As mentioned above, this study does not analyze a relevant market definition as such (a task that would require a specific competition investigation to assess the case in question) but simply a grouping by segments and sub-segments that is intuitive and illustrative to understand the online advertising sector as a whole and its different components.

²²⁷ For example, for the UK (CMA, 2020, p. 224) Australia (ACCC, 2020, p. 8) and France (Décision de l'Autorité de Concurrence n°19-D-26 du 19 décembre 2019 sur Google Ads, ¶ 312; 321) shares above 90% are also obtained, with an indicative percentage of around 85% in the US. (see *38 US Attorneys General v. Google*, ¶ 96).

Display advertising is relatively less concentrated, although there are still preponderant players. For example, in Spain, Facebook (including Instagram) may account for more than 40% of display advertising revenues²²⁸. And in certain formats²²⁹ such as social networks its share is higher, above 70%²³⁰.

Concentration is equally relevant in **open display intermediation** work. In Spain, Google has a revenue share of over 70% as an advertiser ad server, over 60% among DSPs and buying tools, over 50% in sales tools such as ad Networks and SSPs (over 70% among general SSPs), and over 70% as a publisher ad server. These figures are similar to those obtained in the UK (CMA, 2020, p. 266) and Australia (ACCC, 2021, p. 12).

This trend towards market concentration may be due to two factors: barriers to entry and switching costs.

²²⁸ In the UK, Facebook accounts for 35-40% and Instagram for 10-15% (CMA, 2020, pp. 245-246), so Facebook could exceed 50% of display. In Australia, Facebook is estimated to account for 51% of display. (ACCC, 2019, p. 9).

²²⁹ In video format, in the UK, Facebook (including Instagram) is estimated to account for 50-60% of video advertising revenue, while YouTube reaches 15%-20% (CMA, 2020, pp. 246-247). In the US, YouTube's share may be higher and as high as 43% (see 38 *US Attorneys General v. Google*, ¶ 240), with a share that may be higher in the in-stream format (video ads within video content itself, as opposed to out-stream, video ads in non-video content).

²³⁰ In the UK, the share of Facebook (Facebook and Instagram) in social network advertising may be over 70%, because Facebook already accounts for 50-60% of all display, YouTube for 5-10% and the rest of platforms another 5-10% (including some social networks such as LinkedIn, Pinterest, Snapchat, TikTok and Twitter, but also Amazon which is not considered as a social network).

First, **entry barriers** may be inherent (or endogenous) to the sector's economic features²³¹. In digital markets, scale²³², scope²³³, learning²³⁴, and network²³⁵ economies are common, generating efficiencies but also trends to concentration in a few large players (Crémer, de Montjoye, & Schweitzer, 2019). In online advertising, these tendencies can be even more pronounced:

- **Economies of scale** (both in providing content and intermediation) are relevant in online advertising formats (AdIC, 2018, p. 89; ACCC, 2019, p. 8; Evans, 2019) because variable/ marginal costs of increasing service provision are very low and do not face the physical constraints of traditional media²³⁶.
- **Economies of scope** affect online advertising in several ways:

²³¹ Occasionally, operators' conduct may aim to create barriers to entry, in which case a competition analysis is appropriate (as we will discuss below).

²³² Also called static economies of scale (scale economies), indicating that the higher the production, the lower the average cost (due to reduced variable and marginal costs of increasing production in digital services).

²³³ By combining services, the average cost is lowered (scope economies). This may be due to common inputs in providing digital services such as data (non-rival resources that can be used to simultaneously provide different kinds of services without substantially increasing cost). There are also other supply factors that generate synergies and efficiencies, such as human capital (specialized in programming, analysis and data management), artificial intelligence, computational power and innovation characteristics. But there are also demand factors with similar effects: consumers welcome the interoperability of applications and devices within an ecosystem. All this leads to modular and conglomerate business models (Bourreau & de Streel, 2019; de Streel, 2020).

²³⁴ Also called dynamic economies of scale (learning economies), indicating that the greater experience and accumulated production, the lower the average cost (by improving algorithms and other artificial intelligence tools).

²³⁵ Of two types: direct and indirect. Indirect network externalities imply that when agents on one side of the market (e.g., social network users) join the platform, value increases for agents on the other side of the market (e.g., advertisers). Direct network externalities imply that by adding agents on one side of the market to the platform (e.g., social network users), value increases for other agents on the same side (as users will value the possibility of interacting with more people they know).

²³⁶ These physical constraints affect both content provision and intermediation. In providing content and advertising, traditional publishers (such as TV, because of the radioelectric spectrum, or newspapers) face physical constraints and diseconomies of scale (the average cost above a production threshold). Sometimes, there may even be regulatory restrictions (as in TV, with limitations on content or ad time per day and per hour). In traditional intermediation (between agencies/advertisers and the media), the ad buying and selling interaction has a greater human component (compared to programmatic advertising), although some agencies have reported to the CNMC that online advertising is more costly for them in terms of human resources, which is why they tend to charge their advertisers more for intermediation in digital media.

- In providing content (Evans, 2019), advertising-based models (digital and non-digital) arise from economies of scope between providing content to users (to attract their attention) and displaying advertising (to monetize that attention), synergies that online advertising further exploits through amplifying network externalities linked to data (which we discuss below).
- Platforms as publishers also benefit from economies of scope in the services they provide to users²³⁷ with envelopment and ecosystem experiences.
- Intermediation also combines services (Scott Morton & Dinielli, 2020) because of the very nature of data as a common input to provide services and the advantages of interoperability (e.g., for tracking and cookie matching). Therefore, it is usual to integrate a publisher ad server (PAS) with an SSP, an SSP with a DSP or a DSP with an (AAS) and a DMP (integrating targeting, data analytics or tracking services, and even inventory assurance or billing). As we have just mentioned, this integration of services is valued by many players as a competitive factor.
- Finally, intermediation itself presents economies of scope with the work of platforms as publishers because of the role of data. The proximity of platforms to the end user by attracting large audiences as publishers (Bitton, Pearl, Dolmans, & Mostyn, 2019) allows them to accumulate more data and improve their algorithms when placing advertising as intermediaries (not only in their own inventory but also in that of third parties). As we have just discussed, this integration of own inventory selling and intermediation for third parties is considered a competitive factor by many agents²³⁸.
- **Learning economies linked to data** (AdIC, 2018, p. 89) are highly relevant in online advertising. Platforms as publishers improve algorithms for recommendations and content²³⁹ and for placing targeted, relevant advertising. In their intermediation work, it data are also key to improve not only targeting of advertising (by audience profiling) but also transaction matching.

²³⁷ With these services, they can obtain highly relevant data for advertising (e.g., location, interests revealed on social networks, e-commerce platforms or search services).

²³⁸ In terms of competition, the impact of some of these issues, such as some platforms' intermediation of third-party inventory (while their own space is only accessed through their exclusive channels) is analyzed in greater detail when describing specific risks (see section 5.2).

²³⁹ Particularly in sectors such as search (Varian, 2017), especially because of the role of rare searches (long-tail queries, also alluded to in the *38 US Attorneys General v. Google* case, ¶ 91), and because of the granularity of the data and its richness, particularly in location (CMA, 2020, pp. 227-228).

- **Network externalities**, particularly indirect ones, are indeed relevant in online advertising. Both in the work of publishers and content creators (the greater the audience, the greater the attractiveness to advertisers) and in intermediation (the greater the connection to one side of the market such as SSPs, publishers and audience, the greater the attractiveness to the other, i.e., DSPs and advertisers/agencies). Data amplifies these effects: capturing audiences (as publishers) or more transactions (as intermediaries) increases the ability to target advertising, again attracting more players (advertisers lured by more efficient advertising and audiences retained by more relevant advertising, less annoying, intrusive). Data accentuates the relevance and bidirectional nature of the network externality²⁴⁰ (AdIC, 2018, pp. 52-53; Petropoulos, 2016; Hagiu & Wright, 2020; Schäfer & Sapi, 2020; Economides & Lianos, 2021). Even to the extent of reducing multi-homing (de Streel, 2020), i.e., the possibility of using different providers for the same service.

The interplay of these factors leads to **business models that seek to increase transactions and accumulate more data** (specially to take advantage of the interaction of learning economies with network externalities). For platforms as publishers, this often translates into **zero-price models**, heavily subsidizing the product for consumers to attract their attention. Some authors (Caffarra, 2019) consider this to be a barrier to entry in itself: the usual entry strategy of pricing more competitively than incumbent operators cannot be used. Therefore, new entrants have to be more competitive in other dimensions of the

²⁴⁰ Although some authors minimize the importance of network externalities in sectors such as search (Varian, 2017), some cases, such as the European Commission (DGCOMP) AT. 40099 Google Android (¶ 855), do consider that such network effects exist in general search services. Typically, advertising-based models (even offline) have always had network externalities: the larger the audience, the greater the attractiveness to advertisers (Evans, 2019; Petropoulos, 2016). That externality can also go in the opposite direction: greater attractiveness to advertisers implies better funding to provide better content and better service (Bourreau & de Streel, 2019) for the audience (and also better advertising). In digital modes, all this is accentuated, not only because of the role of data-driven targeted advertising but also because many services have direct network externalities (such as social media and e-commerce platforms, which, by attracting many users, increase the value for other users on the same side of the market because of the possibility of finding contacts or the better functioning of rating/review/recommendation mechanisms).

service: fewer ads²⁴¹ or lower data requirements (higher privacy standards) or disruption on the supply side (either in process²⁴² or product innovation²⁴³) or on the demand side.²⁴⁴

In addition, **switching costs** can be relevant, especially in **intermediation**:

- Advertiser ad servers (**AAS**) carry certain switching costs, in the opinion of around 50% of agencies and advertisers surveyed by the CNMC (although only 1 out of 4 platforms or intermediaries considers this to be the case), in line with other reports' findings (ACCC, 2021, p. 13;43). There are technical and operational aspects related to transitioning from one to another (e.g., data integration from the previous server to the new one). These same factors also explain why, in the data for Spain²⁴⁵, advertisers (in general) tend to contract only one provider (single-homing), while agencies tend to have more than one (multi-homing) because they have multiple advertisers in their portfolio (and each one has its preferred server).
- Regarding **DSPs**, some platforms point to the technical and human costs of training and becoming familiar with the different functionalities. However, most of the agencies surveyed do not find relevant the costs of linking to several DSPs, and, in Spain, there is a growing (albeit mild) trend towards using more DSPs. Advertisers (around half of those surveyed) do mention certain costs of simultaneous using several DSPs, although they can be limited to individual campaigns where there is a risk of competing with oneself by bidding on several DSPs (and raising the final price), in line with what other analysts have found (CMA, 2020, pp. M48-M49; ACCC, 2021, pp. 43-44). Although some advertisers point out that linking to multiple DSPs can optimize the budget, the reality is that the practice is much less common among advertisers than among agencies, in line with other report findings (CMA, 2020, p. M49). Therefore, opting for a single provider (Scott Morton & Dinielli, 2020) may be due to technical reasons (data interoperability issues to track the effect of campaigns implemented by different DSPs)

²⁴¹This initial strategy fewer ads and more content, despite its short-term cost, may have been one of the keys to Facebook unseating MySpace (Wu, 2018). Although dominant operators are more aware today of this side of competition and could react by reducing their ad load if they saw a real or potential threat. A new entrant that has so far opted for an ad-free mode is Netflix (Wu, 2018).

²⁴² For example, better algorithms, which may have also helped Facebook's competitiveness over MySpace, albeit to a lesser extent than ad load (Wu, 2018).

²⁴³ Seeking less explored territories (greenfields) to exploit data-driven (and eventually advertising-driven) models, such as the Internet of things in devices and autonomous cars (Wu, 2018). The case of Netflix could also be considered a product innovation.

²⁴⁴ Looking for uncovered consumer niches (Evans, 2013).

²⁴⁵ See section 4.3.d, in line with other analyses (CMA, 2020, p. 40).

or economic reasons²⁴⁶ (such as accumulating the budget in a single DSP to get better conditions or duplicating the fixed costs involved in combining several DSPs to diversify and compare results).

- Regarding **SSPs**, less than half of the publishers surveyed (and 1/5 of the platforms) point to the existence of switching costs or costs of linking to several SSPs, in line with other studies (ACCC, 2021, p. 45). These costs, for those publishers that consider them relevant, may have to do with reduced bargaining power (on fees, for instance) by fragmenting the budget (CMA, 2020, pp. M55-M56).
- Publisher ad servers (**PAS**) entail switching costs²⁴⁷, or at least this is the opinion of 90% of the publishers surveyed by the CNMC and more than half of the platforms, in line with other international reports (CMA, 2020, pp. M65-M67; ACCC, 2021, pp. 45-46) and analyses²⁴⁸. According to the information received by the CNMC, this could be a lengthy process, consuming technical resources (to adapt the inventory by inserting new code and retagging) and human resources (training and learning) and transition costs (both because of the difficulty of integrating the information from the previous server and possible functioning errors in the learning phase) that would entail the risk of revenue loss²⁴⁹. In addition to the costs of switching from one provider to another, simultaneous use (multi-homing) can be very costly (in terms of defining inventory management rules), so the general trend (as shown by the data for Spain²⁵⁰ and other countries²⁵¹) is towards contracting a single provider (single-homing), in line with what

²⁴⁶ It may also influence competitive issues that we discuss in sections 5.2.c and 5.2.d, such as choosing a DSP because of its better connection to the other side of the market (SSP and PAS) or because of access to their own ad inventory from large platforms such as Google, Amazon or Facebook (Geradin & Katsifis, 2020b; ACCC, 2021, p. 13;15).

²⁴⁷ The European Commission (DGCOMP) case M.4731 Google/DoubleClick (¶ 137-138) also pointed out issues such as training the publisher's staff on the new server, required web changes (re-tagging) and transition costs. See also the case (4:20-cv-00957) of *US Attorneys Gen. (Texas et al) v. Google* (¶ 255).

²⁴⁸ See *Decision of the Competition Authority n° 21-D-11 of 7 June 2021 on practices implemented in the Internet advertising sector* (¶ 48).

²⁴⁹ Some publishers in Spain have pointed out to the CNMC that switching costs are also linked to competition issues. See section 5.2.c.

²⁵⁰ See section 4.3.d.

²⁵¹ Publishers point to economic benefits (more favorable fees for managing more impressions by the same server) and technical benefits (better accounting and fewer human and technological requirements). See *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet* (¶ 45).

has already been pointed out by other analysts (Geradin & Katsifis, 2019a; Scott Morton & Dinielli, 2020; CMA, 2020, p. 270; ACCC, 2021, pp. 45-46).

- The very **horizontal (or conglomerate) and vertical integration** along the value chain generates switching costs²⁵² and a trend toward single-homing (Scott Morton & Dinielli, 2020). This is due to technical efficiencies (such as data portability, better analytics, tracking and attribution due to factors such as cookie matching) and economic efficiencies (such as simple management), but also due to competition issues that we will discuss later²⁵³.

In short, there are structural reasons leading to concentration. Market concentration in a few operators (especially in platforms as publishers and intermediaries²⁵⁴) is not desirable if these barriers to entry and switching costs can reduce current and potential competition.

5.1.c. Relevance of mergers

In online advertising, as in other digital sectors,²⁵⁵ mergers have had a special impact on the evolution of the market. The underlying motivation of acquiring companies may be precisely to achieve the efficiencies mentioned above (scale, scope, learning and network economies) and also external growth by acquiring another company to integrate it into their ecosystem (also eliminating a potential competitor in the case of killer acquisitions). Some of the reasons for mergers in the field of online advertising (Bourreau & de Streel, 2019) can be pointed out:

²⁵² For example, integrating a DSP with an advertiser ad server (AAS) and data analytics (DMP) increases the incentives to concentrate investment in that DSP.

²⁵³ See section 5.2.c.

²⁵⁴ Although concentration is increasing in platforms as publishers and intermediaries, it should also be noted that advertisers and agencies tend to concentrate their budget (e.g., in specialized trading desks) in search of greater bargaining power to get better conditions and more affordable prices (Decarolis & Rovigatti, 2019).

²⁵⁵ The FTC (Federal Trade Commission) has launched a review of large digital platforms merger policy. See <https://www.ftc.gov/news-events/press-releases/2020/02/ftc-examine-past-acquisitions-large-technology-companies>

- Database expansion²⁵⁶ (CNMC & ACCO, 2020) to improve targeted advertising placement capability²⁵⁷ (data-driven mergers).
- Consolidation of economies of scope in providing end services that capture consumer attention, either by including supplementary services (in accordance with an envelopment and ecosystem strategy) or by covering different demand niches (such as Facebook's purchase of Instagram for its greater popularity within a younger audience).
- Regulatory aspects (especially privacy-related) that encourage integration, both because of fewer restrictions for processing data from the same company (compared to sharing with third parties) and because regulatory compliance costs (ACCC, 2021, p. 88).

The large online advertising platforms have been very active in acquiring other companies (AdIC, 2018, pp. 48-49; ACCC, 2020, p. 21)

- Google stands out (AdIC, 2018, p. 91; ACCC, 2019, p. 8; CMA, 2020, p. 279; Scott Morton & Dinielli, 2020; ACCC, 2021, p. 13) for acquiring important publishers such as YouTube and intermediaries such as DoubleClick²⁵⁸ (which stood out as a publisher ad server²⁵⁹). This last acquisition was quite relevant because it accentuated the trend towards vertical integration between servers and intermediaries (SSPs/Exchanges²⁶⁰)

²⁵⁶ Database expansion is relevant both for intermediaries and platforms and for traditional publishers that have migrated to digital media. The CNMC has had the opportunity to review the joint venture for programmatic advertising trading by several Spanish publishers (CNMC file C/1028/19: PRISA / VOCENTO / GODÓ).

See <https://www.cnmc.es/expedientes/c102819-0>

²⁵⁷ The relevance of this aspect has been highlighted in the European Commission (DGCOMP) case M. 9660 Google/Fitbit, where concentration has been authorized with commitments restricting the use of data generated by Fitbit devices for online advertising personalization in Google Ads.

See https://ec.europa.eu/commission/presscorner/detail/en/IP_20_2484

²⁵⁸ Also other intermediaries such as Admob, Invite Media and AdMeld (see *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet*, ¶ 87).

²⁵⁹ See European Commission (DGCOMP) Case M.4731 Google/DoubleClick (¶ 33) and US Case M.4731 (Matter of Google/DoubleClick, FTC File Number 071-0170).

²⁶⁰ See European Commission (DGCOMP) case M.4731 Google/DoubleClick (¶ 37-38).

and signalled the starting point of Google's growth in display²⁶¹ intermediation (having initially started by trading its search inventory).

- Facebook (ACCC, 2019, p. 9), although it has also acquired some intermediaries (such as Atlas, an advertiser ad server), stands out especially for buying two end-consumer oriented services, WhatsApp and Instagram, because of their data accumulation and their relevant advertising inventory²⁶².
- Amazon has also recently acquired intermediaries that complement its intermediation role (e.g., Sizmek, which stood out as an advertiser ad server).

Again, these mergers may be of concern to the extent that they may affect current and potential competition.

5.1.d. Data dependence

Data is a key aspect of online advertising. It is a competitive variable between companies and, to some extent, a service output, with potential alternative models in terms of more or less consumer data capture. The most common business models are intensive in data-accumulation, precisely because data is a key²⁶³ input to maximize learning economies and network externalities through targeted advertising.

Although data is a non-rival good in terms of its exploitation, its access is excludable (and, in fact, privacy regulation promotes such excludability), so it is not purely a public good (non-rivalrous and non-excludable) but a "club good" (non-rivalrous but excludable). In

²⁶¹ Other cases of relevance have involved Google's acquisition of other intermediaries (specializing respectively in mobile inventory and SSP services) such as AdMob (Matter of Google, Inc./AdMob, Inc., FTC File Number 101-0031) and AdMeld.

See <https://www.justice.gov/opa/pr/statement-department-justices-antitrust-division-its-decision-close-its-investigation-google>

²⁶² The FTC (Federal Trade Commission) has sued Facebook for this acquisition policy, although the courts have ruled that market power has not been proven to establish abuse. See

<https://www.ftc.gov/news-events/press-releases/2020/12/ftc-sues-facebook-illegal-monopolization>

https://www.pacermonitor.com/view/ITKR63Y/FEDERAL_TRADE_COMMISSION_v_FACEBOOK_INC_dcdce-20-03590_0073.0.pdf?mcid=tGE3TEOA

²⁶³ Some authors (Bourreau & de Streel, 2019) even propose adapting the concept of essential facility to data so that (according to the European Court of Justice Case C-7/97. Oscar Bronner GmbH&Co. KG v. Mediaprint Zeitungs- und Zeitschriftenverlag) it would not be possible to refuse to negotiate their access (because of their indispensable nature without substitutes) on non-objective grounds due to the impact on downstream competition and the detriment to consumer welfare.

economic terms, one might think that databases are "non-excludable" in practice, if they are easily replicable. But economies of scale, scope and, especially, learning and network economies are an advantage for companies that have moved first and have already accumulated a large user base, gaining experience and competitiveness in exploiting such data, refining their algorithms linked to artificial intelligence. And learning economies feed network externalities²⁶⁴.

This explains why data can become a barrier to entry, and why implementing certain data-related behaviours entails risks to competition. And the effects are felt along the entire value chain.

Companies (most notably Google, but also Facebook and Amazon) with a broad ecosystem (ACCC, 2019, p. 8) have a hardly contestable position in access to users²⁶⁵. This gives access to first-party data that, which increase competitiveness to sell (targeted) advertising not only in their inventory (ACCC, 2019, p. 11) but also in third-party inventory (ACCC, 2020, p. 16; ACCC, 2021, p. 13). In a world of increasingly targeted (and relatively less contextual) advertising, market power in monetizing and trading inventory is increasingly dependent on knowing users²⁶⁶ (Scott Morton & Dinielli, 2020). This is why platforms with huge audiences can also be competitive as DSP/SSP (enriching bids with potential audience data), DMP (providing data analytics) or for attribution and tracking services.

This integration occurs not only between platforms as publishers and as intermediaries but also along the intermediation chain. For example, aspects related to data interoperability, such as cookie matching²⁶⁷ or latency²⁶⁸, foster the integration of services such as the

²⁶⁴ As more audiences and transactions are captured, the ability to personalize advertising increases, again attracting more players (audiences and advertisers attracted by "better" advertising).

²⁶⁵ The relevance of first-party data access is also highlighted in the European Commission (DGCOMP) case AT. 40099 Google Android, where it is noted that some of the practices sanctioned to Google sought to increase its ability to obtain data through its operating system (¶ 1140) and its search engine (¶ 1348), to the detriment of competitors.

²⁶⁶ The quality or type of content associated with the advertising inventory becomes less relevant (Kemp, 2020).

²⁶⁷ The technique for "matching" anonymous user identifiers (with profiling information) that generates losses of 30%-40% of cookies when they come from different sources (Geradin & Katsifis, 2020a; CMA, 2020, pp. G71-G72; M34-M35).

²⁶⁸ The fact that a web page or ad takes longer to load.

publisher ad server (PAS) with the SSP and the DSP with the SSP²⁶⁹. These issues benefit companies operating on both sides of the market, as PAS²⁷⁰ and DSP, because as PAS they have direct access to ad interaction data that will be very useful for audience profiling as DSP. And aspects related to data portability also create service integration dynamics (DSP, advertiser ad server and DMP), as data consolidation is much more consistent (without discrepancies). This encourages agents (in the latter case, agencies and advertisers) to contract the integrated provider on a preferential or exclusive basis (single-homing).

A proof of the sector's data dependency is the disruptive effect (on the entire industry) of a major player like Google announcing the elimination of third-party cookies in Chrome, in an initiative known as the Privacy Sandbox (Schuch, 2020; Goel, 2021). The impact will be felt especially on ad tech in programmatic ad trading and national publishers (Geradin, Katsifis, & Karanikioti, 2020a; Kemp, 2020) that do not have access to the volume of first-party data of platforms with global audiences (less reliant on third-party data²⁷¹).

This has prompted some competition authorities to analyse the issue of Google's future removal of cookies (ACCC, 2021, pp. 15;18-19). We highlight the investigation by the UK's

²⁶⁹ Given the cookie-matching problem, when faced with a bid from an SSP, the DSP will tend (*caeteris paribus*) to bid less if that SSP is not vertically integrated (with the DSP) because it will consider its space 30%-40% less attractive (it is only sure to be reaching the desired cookies in 60-70% of cases).

²⁷⁰ Being a publisher ad server, the firm gets direct access to the data generated in its assets, data that is useful (especially when integrated with data from other publishers) for audience profiling (on the DSP side).

²⁷¹ See Section 3.3 for a more detailed explanation of how platforms capture first-party data. Some of these platforms also capture data through ways beyond browsing their own domains. Not only from information revealed when opening an account or logging in but also from browsing other spaces (Geradin & Katsifis, 2020b). Also from the information yielded by mobile devices (CMA, 2020, pp. G76-G77;M76) and their identifiers, increasingly important given the growing significance of mobile inventory, which has already led some platforms to take steps to become less dependent on cookies (Kemp, 2020).

CMA (Competition Markets Authority)²⁷², which could lead to commitments by Google²⁷³, as well as other possible data-related conducts²⁷⁴.

Within the framework of the information requests made by the CNMC, we have had the opportunity to receive the opinion of the players in Spain on this issue. The vast majority of publishers, agencies and advertisers (between 80% and 100% of the players surveyed) and a high percentage of platforms (more than 70% of those surveyed) are concerned about these movements and believe that they may have a negative impact on the online advertising market.

²⁷² See <https://www.gov.uk/government/news/cma-to-investigate-google-s-privacy-sandbox-browser-changes>

The European Commission is also studying the issue.

https://ec.europa.eu/commission/presscorner/detail/en/ip_21_3143

Likewise, the recent case (4:20-cv-00957) *US Attorneys General (Texas et al.) v. Google* (¶ 224-229) seems to delve into this issue.

In France, similar conduct by Apple is also being investigated in relation to how apps can capture consent for data collection from users. See <https://www.autoritedelaconcurrence.fr/fr/communiqués-de-presse/apres-une-activité-très-soutenue-en-2020-lautorite-de-la-concurrence-annonce>

A complaint against Apple has recently been filed in Germany.

<https://www.competitionpolicyinternational.com/germany-hits-apple-with-antitrust-complaint-over-new-iphone-software/>

Google has also announced changes in relation to the ability to track users on Android, moves that may be scrutinized by the European Commission.

<https://support.google.com/googleplay/android-developer/answer/6048248#zippy=%2Cpersistent-identifiers-including-android-id%2Ctargeting-devices-without-an-advertising-id%2Cadvertising-id-violations>

https://ec.europa.eu/commission/presscorner/detail/en/ip_21_3143

²⁷³ See <https://www.gov.uk/government/news/cma-to-have-key-oversight-role-over-google-s-planned-removal-of-third-party-cookies>

<https://www.gov.uk/government/consultations/consultation-on-proposed-commitments-in-respect-of-googles-privacy-sandbox-browser-change>

²⁷⁴ The European Commission is investigating several data-related conducts by Google. See

https://ec.europa.eu/commission/presscorner/detail/en/ip_21_3143

In Italy, the Competition Authority has opened an investigation against Google for discriminatory use of data by excluding access to unencrypted identifiers and user tracking tools (third-party tracking pixels). See <https://en.agcm.it/en/media/press-releases/2020/10/A542>

This leads us to discuss potential issues affecting the advertising environment that we analyse below.

5.2. Potential risks to competition in online advertising

The complexity of the online advertising sector (due to its multi-sided nature, the integration of services and the diversity of business models²⁷⁵) makes it difficult to assess certain conducts. Sometimes, actions that seem solely related to negotiation vis-à-vis customers or suppliers²⁷⁶ may also have the purpose of affecting current or potential competitors²⁷⁷ (Caffarra, 2019). We will assess several examples of conducts that may be problematic in terms of the risks they entail for competition.

5.2.a. Aspects related to conditions for customers and users

Assessing pricing and other contractual conditions in online advertising is a complex matter²⁷⁸. As in any two-sided market, there are at least two prices (and other conditions): those charged to advertisers/agencies, and those charged to users (audience) of the digital content. In this situation, we have to consider the monetary price²⁷⁹ charged to the user, in addition to ad and attention load and the data demanded. This logic applies to all platforms as ad-financed digital publishers. Also, some of these platforms (Google and, to

²⁷⁵ See section 3.3.

²⁷⁶ Platforms with highly consolidated market power will be able to afford to deteriorate these conditions without being penalized by the disciplining effect of network externalities. On a theoretical and abstract level, indirect network externalities (fueled by the role of data and personalized advertising), could reduce incentives to impose harmful conditions on its customers (e.g., an intermediary platform imposing harmful conditions on advertisers/agencies could lead it to losing part of its advertisers/agencies, which will reduce its competitiveness among publishers because of its limited connection to the other side of the market, leading it again to lose advertisers/agencies). However, these incentives may not affect or discipline platforms with certain market power.

²⁷⁷ Vertical integration and the dual role of some platforms owning their own inventory and intermediating third-party inventory are an example of this. For example, an intermediary's behavior towards publishers as its customers also affects its competitiveness in intermediation (by altering the attractiveness of the platforms' own inventory compared to the publishers' inventory).

²⁷⁸ See section 3.4.c

²⁷⁹ The monetary price is usually zero (zero-pricing) because the consumer's willingness to pay for digital services seems low (Holzweber, 2017). This leads to heavily subsidizing the end product (to attract more consumers and generate more data), bundling and subsidizing even the use of supplementary services (e.g., email, messaging and premium services) to improve user experience (Evans, 2013). Zero-pricing policies make it difficult to establish abuse of dominant position based on a quantitative variable such as price, which makes it necessary to consider other more qualitative variables.

a lesser extent, Amazon and Facebook) are intermediaries for third parties, so the conditions applied in this intermediation both on the supply side (to publishers) and on the demand side (to agencies/advertisers) will have to be factored in as well.

One of these conditions is **transparency** and the problems that this variable can generate for operators when conditions applied are discriminatory²⁸⁰. We highlight the French Competition Authority (AdIC) sanctioning Google (including a €150 million fine and certain remedies²⁸¹) in its role as publisher of its own inventory for its Google Ads (formerly AdWords) service for search advertising²⁸². In particular, the rules for advertisers (which determined changes to ad positions or account suspension) were found to be opaque and lacking transparency, depending on whether advertisers linked to paid services. The AdIC's ruling found that these changes could be random and unannounced, and their application was discriminatory²⁸³ and inconsistent²⁸⁴, causing predictability issues for advertisers.

The heart of the matter was that Google Ads (formerly AdWords) prevented these advertisers from charging for services (such as weather reports) usually offered on the Internet for free (an interpretation that, in the AdIC's view, already has a certain margin of discretion). The theory of harm is to favour business models based on free content (which increase user acquisition and data generation compared²⁸⁵ to paid models) and possibly harm more specialized (vertical) sites²⁸⁶.

²⁸⁰ To avoid undermining competition, the criteria must be objective, transparent and non-discriminatory. See, for example, CNMC Case [S/0007/20: GOOGLE UNOFFICIAL TECHNICAL SERVICE](#), which resulted in a complaint against Google being dismissed.

²⁸¹ Clarification of rules and procedures on policy changes and account suspensions, with clear systems for detecting non-compliance to avoid arbitrariness.

²⁸² See *Décision de l'Autorité de Concurrence n°19-D-26 du 19 décembre 2019 on Google Ads*.

²⁸³ For example, companies with similar policies regarding their link to payment services being treated differently.

²⁸⁴ For example, different treatment of the same companies over time with no change in their link to payment services.

²⁸⁵ First-click free models (Caffarra, 2019).

²⁸⁶ Another way in which reduced transparency can affect vertical search engines is by not providing auction data to advertisers (CMA, 2020, p. 237), which makes it difficult for them to optimize their investment or eventually redirect it to other less demanded positions, e.g., in vertical search engines.

Lack of transparency affects not only the search advertising market but also, and perhaps even more especially, the display advertising market²⁸⁷ (CMA, 2020, p. 17; ACCC, 2021, pp. 17-18). On the one hand, platform advertising often requires a number of conditions for enhanced use by advertisers or specialized service companies, which can lead to risk of a discriminatory application²⁸⁸.

In addition, the complexity of the programmatic ecosystem (ACCC, 2019, p. 2;12;14; AdIC, 2018, p. 3) generates a lack of transparency for advertisers and publishers²⁸⁹, not only in terms of prices and fees actually paid to intermediaries (Geradin & Katsifis, 2019b) but also in terms of measuring performance (Scott Morton & Dinielli, 2020). This issue interacts with other competition issues we are assessing in this section:

- Market power, and in particular vertical integration, fosters this type of transparency-limiting conduct (especially with regard to the remuneration of the various services).
- The very lack of transparency about campaign pricing and effectiveness hinders the optimal selection of intermediaries and media (ACCC, 2021, p. 17), potentially entrenching market power. And both problems feed back into each other: market power allows an operator not to be transparent with its customers or suppliers because it does not perceive the risk of being penalized.

Other types of **conditions** that could involve risks (by limiting operators room of manoeuvre) may be:

- From a contractual point of view, in addition to arbitrary changes in conditions, limiting the number of (publishers' or advertisers'/agencies') complaints about system incidents or restricting communication with the authorities.

²⁸⁷ An example common to search and display (CMA, 2020, pp. 230-231;257) is the opacity about optimal pricing to minimize bidding on inventory buys and performance metrics for advertisers on the major platforms in search (Google) and display (Facebook), which is a problem, especially for small advertisers.

²⁸⁸ See a French Competition Authority investigation on Facebook
<https://www.autoritedelaconurrence.fr/en/press-release/context-investigation-opened-autorite-online-advertising-sector-facebook-proposes>

²⁸⁹ See Case (4:20-cv-00957) *US Attorneys General v. Google* (4:20-cv-00957). (Texas *et al* v. Google) (¶ 216-223).

- From a technical point of view (in this case only towards publishers), imposing certain formats such as AMP (Accelerated Mobile Pages, in the case of Google²⁹⁰) or IA (Instant Articles, in the case of Facebook) (CECO UAI, 2020).

In short, when assessing possible platform conducts²⁹¹ towards advertisers/agencies and publishers, qualitative conditions (such as transparency or technical and contractual conditions) are usually paid more heed than a quantitative variable such as price. Although "supra-competitive" fees and prices²⁹² (Scott Morton & Dinielli, 2020; CMA, 2020, pp. 65-68; 307) that are not appropriate for the quality of the service²⁹³ (CMA, 2020, pp. 230;256-257) are sometimes quoted. This may be evidence of a certain market power without necessarily implying a problematic conduct.

According to the **information gathered by the CNMC** in the framework of requests of information to operators in relation to transparency and opacity conditions:

- Less than half of the advertisers and agencies surveyed (between 35% and 50%) believe that they face arbitrary changes in conditions from advertiser ad servers and DSPs, but they do point out to opaque conditions, especially advertisers (70%), who feel that they do not have enough information about the cost of bids or the factors that determine winning bids (which makes it difficult to plan or retarget their campaigns).
- On the publishers' side, most of them (70-80%) point out that they are faced with changes in SSP and server conditions, sometimes arbitrary (e.g., on revenue reporting) and sometimes hindering their operation (even if not so abrupt). Issues of opacity are also reported, both for identifying the advertiser (sometimes, when the bid comes from the open auction market, only the buying tool or the source DSP is known but not the

²⁹⁰ See Case (4:20-cv-00957) *US Attorneys General v. Google* (4:20-cv-00957) (Texas *et al* v. Google) (¶ 206-213), where it is stated that one of the reasons to impose AMP is incompatibility with header bidding (¶ 206),

²⁹¹ We are referring, obviously, to digital platforms that are mostly financed by online advertising revenue. Other authors (Caffarra, 2019) who point out risks of excessive prices on some platforms do so for models not based mostly on online advertising (such as Apple or Amazon).

²⁹² See Case (4:20-cv-00957) *US Attorneys Gen. (Texas et al) v. Google* (¶ 69, 77, 95, 157, 256, 268, 292, 301) for intermediation in open display. For search advertising on Google (CMA, 2020, p. 230; Scott Morton & Dinielli, 2020) for example, possible evidence of supra competitive pricing can be found in low-demand auctions (with a large percentage of auctions where only one bid is above the reserve price set by Google, this reserve price thus ending up being the final price).

²⁹³ See case (4:20-cv-00957) *US Attorneys General (Texas et al) v. Google* (¶256) where it is argued that Google has downgraded the quality of its publisher ad server.

advertiser) and for obtaining information on non-winning bids. Both of these issues make it difficult to optimize inventory.

Finally, in addition to the platforms' actions towards their clients (advertisers/agencies and publishers), their behaviour towards end users must also be taken into account. We highlight these three aspects:

- The monetary price platforms charge end users for their services is usually zero. However, according to some authors (Economides & Lianos, 2021), this does not imply that the market power towards their users is low, and that in a counterfactual case of increased competition the platforms would not pay positive monetary prices for their audience attention and data. But, in any case, in this context this is likely to be more an evidence of market power than a potentially problematic conduct, apart from the fact that the zero-pricing model (with users "paying" with their data and attention without being remunerated for it) is widespread in digital services (also for smaller audience applications and platforms).
- Another way in which platforms "charge" their users is through the impact of ad load and viewing time or attention²⁹⁴. This increase in ad placement may be occurring in markets where there are relevant operators such as Google in search (Wu, 2018; CMA, 2020, pp. 229;C41-C43) or Instagram (to a greater extent than Facebook) in social networks (CMA, 2020, p. 256;C69). Again, this could reflect different sizes of market power rather than a potentially problematic conduct.
- Finally, there is the "price" that users pay by surrendering their personal data (e.g., information disclosed directly on platforms, anonymized data in cookies or browsing history) to access that content on the Internet. Including privacy in the quality variables²⁹⁵ is complex (OCDE, 2020, pp. 52-54). In this regard, the case of Facebook's abuse of dominant position in Germany for abusive (unfair) conditions in collecting personal data is noteworthy ²⁹⁶ (Botta & Wiedemann, 2019, p. 472).

Other conducts with an impact on competition may have to do with access discrimination, as we detail below.

²⁹⁴ Tracking time/space spent on advertising in terms of attention required (Wu, 2018; Evans, 2013).

²⁹⁵ Other types of qualitative aspects towards consumers could be the accuracy of consumer information or the fairness of rankings (Caffarra, 2019).

²⁹⁶ Another way collecting personal data could harm the consumer could be the increased ability for first-degree price discrimination (Forrest, 2019, p. 11).

5.2.b. Aspects related to access discrimination

Potential access discrimination may be more prevalent in digital markets when platforms act as gatekeepers²⁹⁷ in relation to certain goods and services²⁹⁸ (Bourreau & de Streel, 2019).

We highlight a sanction (including a €1.49 billion fine²⁹⁹) by the European Commission against Google for abusing its dominant position in access to online search advertising³⁰⁰ related to the search box inserted in third-party websites. Between 2006 and 2009, exclusive supply obligation clauses were imposed, preventing these websites from displaying ads from other search engines. Since 2009, the policy was relaxed from exclusivity to premium placement of Google ads, including its ability to veto third-party ads³⁰¹. This meant foreclosing competitors' access to search advertising without the potential efficiencies³⁰² offsetting the distortion of competition generated.

Also noteworthy is a ruling by the Canadian Competition Bureau (CCB) for abuse of dominant position over Google AdWords (currently Google Ads, the product most used by advertisers for display search advertising) because of restrictions on transferring advertising campaign data to competing tools (via APIs³⁰³). These restrictions were not justified on technical or efficiency grounds and affected competition by making it difficult to switch and combine different services simultaneously (multi-homing)³⁰⁴.

²⁹⁷ A gatekeeper can be defined as a company with a well-established user base (of end or commercial users) in providing a given service, which makes it difficult to bypass this gateway to gain access to these users. See section 2.1.c for the formal definition under consideration by the EU.

²⁹⁸ The ability to foreclose, the incentives to foreclose and the impact on competition must be taken into account in order to find a possible discrimination (Bourreau & de Streel, 2019).

²⁹⁹ The remedies consisted of ceasing the conduct, although the conduct had already ceased (in 2016) prior to the resolution (in 2019).

³⁰⁰ See the case of the European Commission (DGCOMP) AT. 40411 Google Search - AdSense

³⁰¹ The most lucrative space was reserved for Google ads, with no ads from other search engines able to appear above or in parallel, including veto power for Google over ads from other search engines.

³⁰² Some authors (Portuese, 2019) pointed out among these efficiencies Google's investment to include the search tool bar on the page.

³⁰³ Application Programming Interfaces, which ensure data portability and interoperability.

³⁰⁴ As a result, Google pledged not to enforce these restrictions, similar to its commitments in the US following a similar investigation by the FTC (Federal Trade Commission).

A recent US lawsuit³⁰⁵ considers three types of conduct by Google in the search advertising market that may have an anticompetitive effect:

- First, payments (thus sharing its search advertising revenues) for being the default or exclusive search engine³⁰⁶ on Apple devices, browsers (such as Mozilla's Firefox), vehicles, voice assistants, etc. Data generated in these domains add fundamental value by being combined with those coming from Android devices³⁰⁷.
- Second, discrimination against its main competitor (Microsoft Bing) by limiting interoperability³⁰⁸ with its SA360 search advertising optimizer³⁰⁹.
- Third, discrimination against certain pages³¹⁰ (“specialized” vertical search engines) in search ads that tend to appear in a richer format³¹¹ above text ads, making it difficult for them to appear with their own brand and their own link to their domains³¹² (allowing

³⁰⁵ See the case of 38 US Attorneys General (*Colorado et al. v. Google*).

³⁰⁶ See ¶¶ 40-48, 105-111 and 123-143 of the case of 38 US Attorneys General (*Colorado et al*) v. Google.

³⁰⁷ See ¶¶ 112-122 of the case of 38 US Attorneys General (*Colorado et al*) v. Google. This first set of conducts falls not so much within the search advertising market as within the search market as such. It is along the same lines as the Department of Justice's lawsuit (case 1:20-cv-03010) plus 11 US Attorneys General v. Google concerning Google's policy to encourage using its search engine on Android and other devices, although the latter case (1:20-cv-03010) is broader and resembles the European Commission (DGCOMP) case AT. 40099 Google Android, which resulted in Google being fined with €4.34 billion.

³⁰⁸ See ¶¶ 49-50 of the case of 38 US Attorneys General (*Colorado et al*) v. Google. For example, limiting access to Bing in real-time auctions in SA 360 (¶ 144-159) or reducing functions such as a direct call button to the advertiser's phone in search results (¶ 144-160). This has also been pointed out in other studies (CMA, 2020, pp. 240-241).

³⁰⁹ Search Ads 360 (SA 360) is a meta tool (SEM, Search Engine Marketing tool) to optimize and automate spending on all search engines simultaneously, instead of going separately to each native tool (Google Ads or Microsoft Bing Advertising). See the case of 38 US Attorneys General. (*Colorado et al*) v. Google (¶ 145-147). Other tools similar to Search Ads 360 are Marin and Kenshoo. (CMA, 2020, p. 227). With US data, these types of tools can account for 50% of the search market, with the remaining 50% going to contract native tools directly (see 38 US Attorneys General v. Google, ¶ 146). Using UK data, 30%-40% of Google's search revenue comes from Search Ads 360.

³¹⁰ See ¶¶ 40-48 of the case of 38 US Attorneys General. (*Colorado et al*) v. Google.

³¹¹ Such as in carousel format (where it is possible to scroll through with side arrows) or in box format (where, for example, the Google Maps link may appear). See ¶¶ 175-178 of the case of 38 US Attorneys General. (*Colorado et al*) v. Google.

³¹² Therefore, vertical search engines are relegated to text links, much more limited in content (in terms of image, identification, functionalities). See ¶¶ 175-182 and 185 of the case of 38 US Attorneys General (*Colorado et al*) v. Google.

Google to remain competitive as the first gateway for these vertical or specialized searches for specific services).

Thus, although the conduct harms consumers³¹³ and advertisers,³¹⁴ its effect on competitors (such as Bing) and vertical search engines³¹⁵ is also apparent. In this case³¹⁶ it is alleged that these conducts may reduce consumer welfare, efficiency for advertisers and the ability of current or potential rivals to compete. However, other similar cases³¹⁷ of this third component of discrimination of vertical search engines to benefit their own content (self-preferencing, for example, towards Google Maps ads in an information box) found justification for the conduct because of its efficiencies³¹⁸, which increased consumer welfare and productivity for advertisers.

So far, we have seen conducts in the search domain. There are also authors who warn of similarly risky practices in display, such as interoperability restrictions (Scott Morton & Dinielli, 2020). Some platforms have pointed out to the CNMC that Google restricts the portability of its DSP user data to other DSPs or the ability to link its advertiser ad server to other DSPs, making multi-homing difficult, although Google claims efforts to ensure the interoperability of its tools.

³¹³ They face distorted search results due to discrimination against Microsoft Bing and specialized vertical search engines.

³¹⁴ They do not necessarily get the best possible options, for example, because of discrimination against Microsoft Bing.

³¹⁵ As in the case of the French Competition Authority against Google Ads, where such conduct that harmed advertisers was also intended to affect certain business models such as vertical search engines. See the *Décision de l'Autorité de Concurrence n°19-D-26 du 19 décembre 2019 on Google Ads*.

³¹⁶ See ¶¶ 200-207 of the case of *38 US Attorneys General (Colorado et al) v. Google*.

³¹⁷ See, among others, (Manne G. , 2018) *EU Ltd v Google Inc. & Ors* EWHC 253); India (CCI cases 07 and 30 of 2012, although it did include a remedy for Google to specify that its results linked to its own flight search service so as not to confuse consumers); US (Matter of Google Inc., FTC File Number 111-0163); and Canada (Competition Bureau Statement Regarding its Investigation into Alleged Anti-Competitive Conduct by Google):

<http://www.bailii.org/ew/cases/EWHC/Ch/2016/253.html>

<http://www.cci.gov.in/sites/default/files/07%20%26%20%2030%20of%202012.pdf>

https://www.ftc.gov/system/files/documents/public_statements/295971/130103googlesearchstmtofcom.pdf

<https://www.canada.ca/en/competition-bureau/news/2016/04/competition-bureau-completes-extensive-investigation-of-google.html>

³¹⁸ Due to different factors (Ibáñez-Colomo, 2016; Kokkoris, 2018) such as reduced response time (Manne G. , 2018) or better user experience (demonstrated in click probability, CTR, Click-Through-Rates).

There is also debate about the restrictions on other intermediaries' access to the platforms' own inventory (Geradin & Katsifis, 2020b), since main platforms' own inventory (e.g., on YouTube or Facebook) can only be accessed by their own buying tools. Some authors (Geradin & Katsifis, 2020b) believe that inventory should be accessible (through auction) by third-party intermediaries (as was the case with YouTube until 2015), except for justified causes (e.g., fraud or inappropriate ads).

These cases are closely linked to the existing integration in the sector, especially vertical integration along the value chain, but also in relation to the publisher-side and other related services. We review the risks associated with such integration below by dividing them into two types: market power leveraging along the value chain and conflicts of interest due to vertical integration (such as self-preferencing).

5.2.c. Leveraging market power along the value chain

The relevant presence of platforms (notably Google) on both sides of the market (CMA, 2020, pp. M95-M96) creates room for leveraging their market power along the value chain.

A recently opened case in the United States³¹⁹ points out this **expansion of Google's market power from the demand side (advertisers and agencies) to the supply side (as SSP/Exchange and publisher ad server)**. Some publishers have also pointed out to the CNMC the importance of this issue in Spain, in line with other studies (CMA, 2020, p. 278;M72) that emphasize the conflict of interest between being both a DSP and a publisher ad server.

Google's demand-side tools, DV 360 and Google Ads, uniquely combine (AdIC, 2018, p. 61) access to their own ad inventory from YouTube (in both cases), Google Search and Gmail (the latter only with Google Ads) with third-party inventory. This implies a high demand concentration. Spain's data confirm that Google's share in demand channelling may exceed 60%³²⁰.

On the other side of the market, this has a significant impact on publishers, as pointed out by some players in Spain, in line with other reports (ACCC, 2021, p. 14). Publishers point out that Google Ads can account for a higher percentage than flows from DV360, even at

³¹⁹ See Case (4:20-cv-00957) *US Attorneys General (Texas et al) v. Google* (4:20-cv-00957) (¶¶ 99-111; 261).

³²⁰ See section 4.3.b.

large publishers³²¹. Within Google Ads, small advertisers are in the majority (compared to the more sophisticated advertiser profile of DV360). This means lower transaction identification for publishers (with less control of who has been their advertiser), which paradoxically ends up making them more dependent on this Google Ads demand. As publisher and advertiser do not identify each other³²², they cannot establish links to close potential bilateral agreements in the future without the need for intermediaries. However, we cannot rule out that this situation is occurring at a supranational level; therefore, the most efficient approach may be to analyse it from a supranational perspective.

In any case, much of the demand comes from Google's two buying tools (Google Ads and DV360). This leads publishers to generally opt for their server (Google Ad Manager) to minimize the risk of lost demand³²³ (in terms of cookie matching discrepancies or missed opportunities due to latency) and improve data access. There is no market trend to use more than one server³²⁴, and opting for an alternative would generate, apart from the inherent switching costs for the publisher, the risk of losing a very significant demand volume (AdIC, 2018, p. 61).

This also determines the preponderant position of Google AdX as SSP/Exchange, because most of the demand for DV360 and especially Google Ads ends up in AdX³²⁵ (CMA, 2020, pp. M56;M108-M109). Also because of the benefits of linking AdX (SSP) with Ad Manager (server), both in operational terms and data access³²⁶. And especially because AdX does not link as easily in real time with other servers (CMA, 2020, pp. 283-285). That is, an alternative server, which in general will use a header bidding system to order SSPs bids, loses attractiveness by not efficiently integrating the part of the market

³²¹ See also Case (4:20-cv-00957) *US Attorneys General (Texas et al) v. Google* (4:20-cv-00957) (¶ 107).

³²² In section 5.2.a we have already pointed out the difficulty for publishers to identify the advertiser when the bid comes from the open auction market (only the buying tool or the originating DSP is known but not the advertiser).

³²³ See also *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet* (¶ 230-234).

³²⁴ See sections 4.3.d and 5.1.b.

³²⁵ The derivatives of vertical integration between DSPs and SSPs are explained in more detail in section 5.2.d. See in any case *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet* (¶ 226-229).

³²⁶ See sections 5.1.a and 5.1.b. See also *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet* (¶ 196-199).

that Google's SSP/Exchange³²⁷ channels (much of the demand coming from Google Ads, plus what can be connected via DSPs, be it DV360 or others) because of poor interoperability (apart from poor integration of AdX in header bidding systems explained in section 5.2.d).

Finally, data reporting and audience profiling will be better for DV360 users if the bidding also ends up in the Google AdX Exchange/SSP (rather than other Exchanges/SSPs) because of technical (i.e., increased cookie synchronization) and regulatory factors (existing barriers to data transfer to another company). This is encouraging more advertisers/agencies to direct their bids to AdX³²⁸ (AdIC, 2018, p. 60). Again, market power on the demand side affects competition on the supply side.

In other cases, the distortion is reversed, and **market power from the supply side (as a SSP/Exchange and a publisher ad server) can be used to gain competitiveness on the demand side:**

- An example is the uniform reserve price policy³²⁹ by Google's publisher ad server³³⁰ (Google Ad Manager), an issue strongly emphasized by some publishers in Spain. DSPs that aggregate higher demand and better data³³¹ for audience profiling (such as Google's DV360) will tend to be willing to pay a higher price but will try not to disclose it and will reduce their bid (*bid shading*) to the minimum to win the auction³³² (slightly above what they estimate for other competitors). Therefore, publishers have

³²⁷ The derivatives of vertical integration between SSP and publisher server and the possible distortion on header bidding systems are further explained in section 5.2.d

³²⁸ See Case (4:20-cv-00957) *US Attorneys General (Texas et al) v. Google* (¶ 111).

³²⁹ A minimum price to consider the offer of a given SSP/Exchange.

³³⁰ See Case (4:20-cv-00957) *US Attorneys General v. Google (Texas et al)* (¶ 111; 230-234).

³³¹ DSPs will tend to have third-party data (which they may have accumulated from information received from other players, e.g., from publishers in relation to campaign audiences). But some DSPs such as Google's also have access to first-party data, resulting from data obtained from their publisher side (on search or YouTube, for example) and from other sources (such as device data). See section 3.3.

³³² Considering that this auction in the SSPs/Exchanges to select each bid among the DSPs is a first-price auction (FPA, First-Price Auction, where the winner pays the bid). Even in a second-price auction (SPA, Second-Price Auction, where the winner pays the bid of the second bidder), although there may not be incentives for bid shading in the short term (because, even if you bid high, you pay the bid of the next competitor), there may be incentives for bid shading in the long term (to avoid providing information to the other side about the willingness to pay, which may result in higher reserve prices in the future).

incentives³³³ to demand higher reserve prices from SSPs/Exchanges (such as Google AdX) that manage to connect better with those DSPs. However, publishers in Spain point out that Google has introduced uniform reserve prices, in line with other analyses³³⁴ (ACCC, 2021, p. 15; CMA, 2020, p. 287), so that their server (Google Ad Manager) prevents publishers from imposing different reserve prices on SSPs, which favours Google's competitiveness as a DSP (it will not have to pay as much as it would have to without such a uniform reserve price policy).

- Other similar policies relate to access to data associated to publisher ad server activity³³⁵. Some publishers in Spain have reported problems accessing *ex post* bidding information, which makes it difficult for them to optimize their inventory and pricing policies. However, since it cannot be ruled out that this situation is occurring at a supranational level, it would be most efficient to analyse it from a supranational perspective. Google has an incentive to deprive publishers of access to this information³³⁶ (CMA, 2020, pp. 288-289), to prevent them from better estimating willingness to pay and raising the reserve price (which could harm Google as a DSP). The lack and asymmetry of information (ACCC, 2021, pp. 17-18) may lead publishers to misjudge the profitability of certain transactions (such as direct private negotiation with advertisers or agencies), which may lead them to increasingly use programmatic trading, which involves a fee for Exchanges/SSPs such as Google AdX³³⁷.

³³³ See *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet* (¶ 210-211), where other incentives for publishers to apply different reserve prices are considered.

³³⁴ See also *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet* (¶ 138-144).

³³⁵ The information provided by the server may also be less complete for publishers using a header bidding system (explained in section 5.2.d), which also affects the information from transactions that reaches intermediaries such as SSPs/Exchanges (ACCC, 2021, p. 15), since they access third-party data from the data that may be accumulated by first-party publishers. See section 3.3. See also *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet* (¶ 214-216).

³³⁶ See Case (4:20-cv-00957) of *US Attorneys General (Texas et al.) v. Google* (¶ 125-129). In Italy, the Competition Authority has opened an investigation against Google for discriminatory use of data by excluding access to unencrypted identifiers and user tracking tools (third-party tracking pixels). See <https://en.agcm.it/en/media/press-releases/2020/10/A542>

³³⁷ This also explains the server's margin to favor bids coming through its own vertically integrated SSP/Exchange, as we will see below in relation to vertical integration conflicts of interest. See the case (4:20-cv-00957) *US Attorneys Gen. (Texas et al) v. Google* (¶ 144-152).

Both dynamics (leveraging from the demand side to the supply side and from the supply side to the demand side) feed back into each other³³⁸. Google's market power on the supply side (its large share as SSP/Exchange and, specially, as publisher ad server) allows it to implement these policies that benefit its competitiveness on the demand side (Google's DSPs do not have to pay as much as they would without such a uniform reserve price policy for SSPs). But, at the same time, the margin that the publisher ad server has to apply these policies is also due to market power on the demand side (with Google's share in demand channelling that may exceed 60%³³⁹), so both situations feed back into each other.

These feed-back dynamics (between market power on the supply and demand sides) are also present if we consider that **platforms act both as sellers of their own inventory (as publishers) and as intermediaries in buying and selling third-party inventory**. As publishers, platforms have a very attractive inventory because of their very large audiences³⁴⁰, but this is only accessible through their purchasing tools, although these same tools do allow the purchase of third-party inventory³⁴¹. This can generate two-way distortions³⁴²:

- As shown in Figure 29, this exclusive access to their own inventory by some platform purchasing tools (e.g., Google, Facebook and Amazon) also increases their competitiveness on the demand side (e.g., DSP, which also channels investment to third-party inventory). In this case, market-power leveraging would go from supply to demand, taking advantage of the relevance of their own inventory³⁴³ (while maintaining the flexibility of simultaneous real-time access to third-party inventory).

³³⁸ According to some authors, this encourages Google to lower the price of its publisher ad server in order to keep many publishers in its portfolio and drive away competition, entrenching its market power on the demand side (Scott Morton & Dinielli, 2020, p. 20) by relying on indirect network externalities.

³³⁹ See section 4.3.b.

³⁴⁰ Attractiveness is due not only to traditional network externalities (the larger the audience, the more value for advertisers) but also to the role of data (the larger the audience, the greater the accumulation of data, the better the targeted advertising, the greater the attractiveness for advertisers and the greater the audience retention due to more relevant and less annoying advertising).

³⁴¹ See section 3.2 for a description of these purchasing tools.

³⁴² The European Commission is investigating several Google conducts related to exclusive access to its YouTube inventory through its tools.

https://ec.europa.eu/commission/presscorner/detail/en/ip_21_3143

³⁴³ The fact that the own inventory provides first-party data to the platforms is also useful for their competitiveness in intermediation for third parties.

The case of the Google Ads tool³⁴⁴ is particularly striking as a gateway to its own very attractive inventory in search (Google Search), in video-display (YouTube) and in other formats (Gmail), adding access to third-party display inventory. This makes it a preferred tool for buying inventory, particularly for small advertisers³⁴⁵. Therefore, its relevance in search advertising (Geradin & Katsifis, 2020b; CMA, 2020, pp. 242;279-280) extends to display³⁴⁶ (horizontal leveraging). And, within display, from video to the rest, increasing its weight in the intermediation of third-party inventory in open display (vertical leveraging).

As we have mentioned earlier³⁴⁷, around 75%-80% of advertisers and agencies surveyed value that the DSP or buying tool integrates access to platforms' own inventory (something that only Google DV 360 DSP, Amazon DSP and Facebook Audience Network do), or even that it integrates access to search and display inventory (something that only Google Ads does). As part of the CNMC's information requests, some technology intermediaries have pointed out that Google's attractive inventory, coupled with its granularity in data accumulation, greatly influences its competitiveness in intermediation of third-party ad inventory. This prompts advertisers or agencies to consider DV360 a priority DSP for campaign management, not only because of its access to Google inventory but also to fine-tune certain aspects (e.g., tracking or limiting the frequency of ad impacts on a certain user profile). These issues are common to other studies (CMA, 2020, p. M72; ACCC, 2021, p. 13;15).

³⁴⁴ Something similar would apply to its buying tool for large advertisers and agencies (its DV 360 DSP), where simultaneous access to YouTube and other inventory creates a tendency to contract it as a preferred supplier (Geradin & Katsifis, 2020b; CMA, 2020, pp. 279-280; ACCC, 2021, p. 13;15). See also the case (4:20-cv-00957) *US Attorneys Gen. (Texas et al) v. Google* (¶ 238-249; 262).

³⁴⁵ In ad buying tools, there are switching costs and a tendency to use few or even single-homing suppliers for a given campaign or in the case of small advertisers. This is due to technical factors (such as data interoperability issues to track the effect of campaigns implemented by different DSPs) and economic factors, since only the largest advertisers/agencies can afford the fixed costs of simultaneous use of several DSPs to diversify and compare results due to economies of scale (Scott Morton & Dinielli, 2020, p. 18; 23). See section 5.1.b.

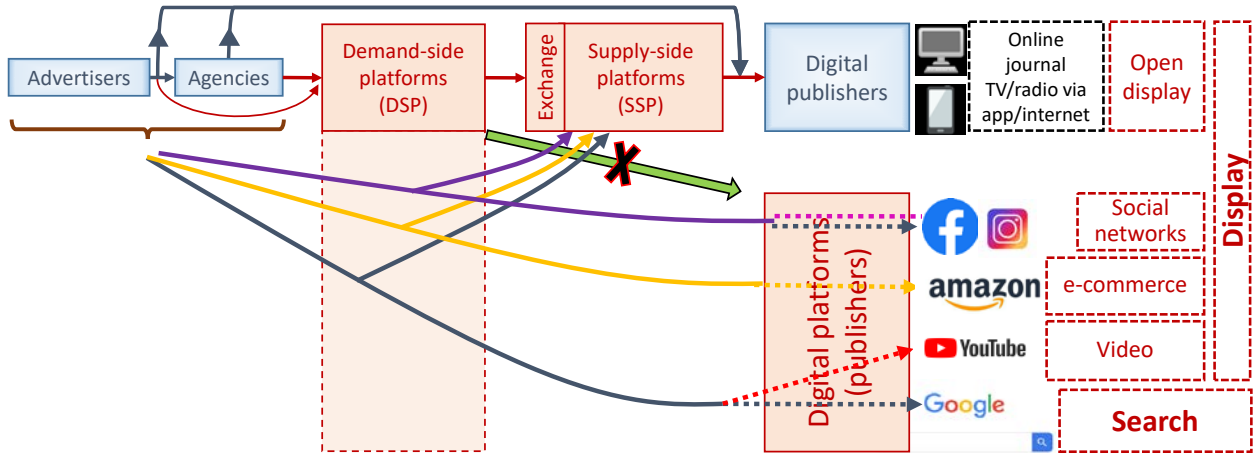
³⁴⁶ Another issue investigated by the EU and UK authorities is the use of Facebook Ads data (from display advertising) for its marketplace (classified advertising). See

https://ec.europa.eu/commission/presscorner/detail/en/ip_21_2848

<https://www.gov.uk/government/news/cma-investigates-facebook-s-use-of-ad-data>

³⁴⁷ See section 5.1.a.

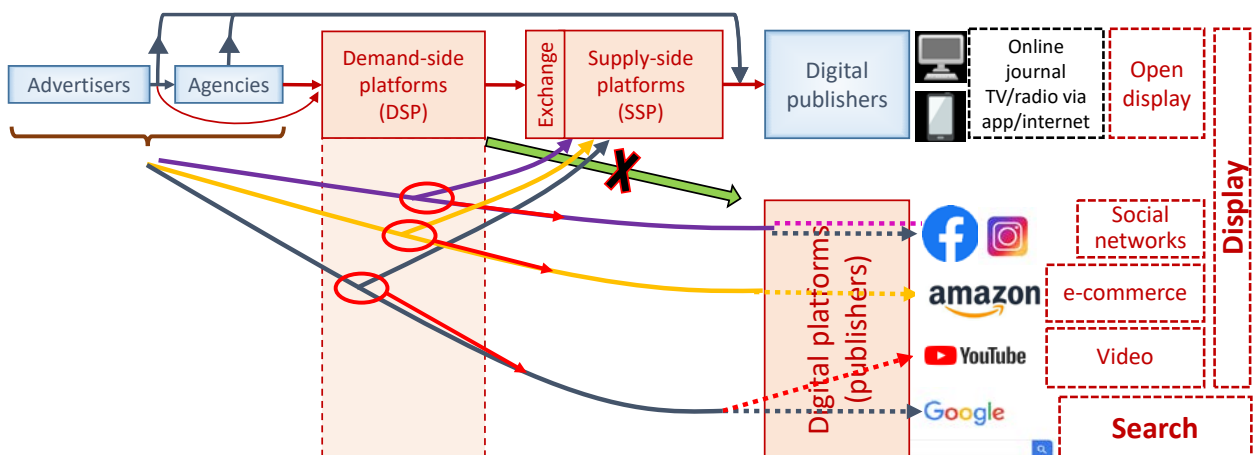
Figure 29. Platform competition in the purchase and sale of inventory



Source: own elaboration.

- As Figure 30 shows, market share could be used as a demand-side purchasing tool (especially from Google) to try to divert purchases to its own inventory to the detriment of third-party inventory (CMA, 2020, pp. 22-23; ACCC, 2020). However, relevant players on the demand side have pointed out to the CNMC that more sophisticated advertisers could try to maintain control over the destination of their media investment in certain cases, apart from their preference for not concentrating their campaigns (downplaying this argument).

Figure 30. Platforms' intermediation in open display



Source: own elaboration.

At the same time, this integration of platforms' own inventory into purchasing tools or the bundling of adjacent services in the value chain leads us to address issues of vertical integration and risks of conflicts of interest in the form of self-preferencing.

5.2.d. Conflicts of interest due to vertical integration

In addition to independent players, some platforms with their own inventory also operate as intermediaries such as Facebook,³⁴⁸ Amazon³⁴⁹ and, especially, Google, which stands out for its vertical integration³⁵⁰ and for being present in all links of the value chain³⁵¹.

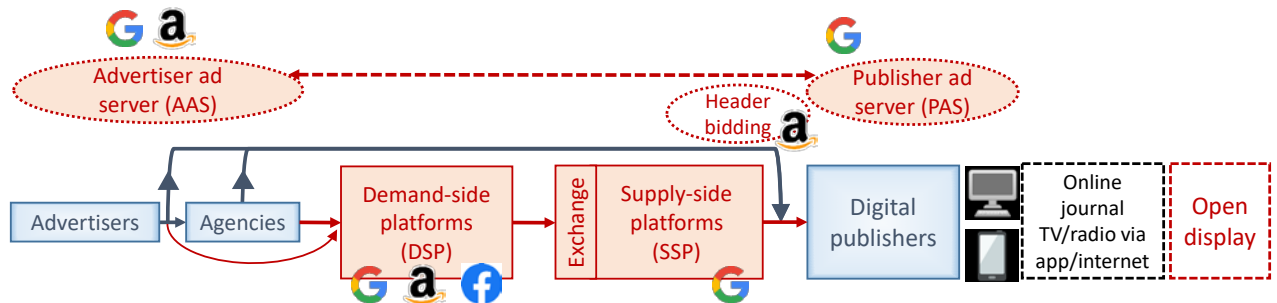
³⁴⁸ Facebook has an ad-buying tool that accesses its own inventory (Facebook, Instagram, Messenger) simultaneously with third-party space for subscribers to the Facebook Audience Network (specialized in mobile inventory).

³⁴⁹ Amazon, with its DSP, offers real-time flexibility of simultaneous access to its own inventory or to third party inventory on Exchanges/SSPs. On the supply side, it has a header bidding solution.

³⁵⁰ On the demand side, Google, apart from an advertiser ad server (Campaign Manager), has two buying tools. First, Google Ads, which uniquely combines in market access to its own search and display (YouTube) ad inventory, with the addition of third-party inventory connected to the Google Display Network (GDN). Second, Google's pure DSP DV 360 that combines, with real-time flexibility, access for the display segment to its own inventory in YouTube and to third-party inventory (linking to multiple Exchanges/SSPs). On the supply side, Google, apart from a publisher ad server (Ad Manager), has different sales tools. For medium and large publishers, its SSP/Exchange AdX stands out. For smaller publishers, its AdSense (for fixed inventory) and AdMob (for mobile inventory) networks stand out.

³⁵¹ Its purchase of DoubleClick was highly relevant because it set the trend towards vertical integration, starting with greater integration between servers and intermediaries (SSPs/exchanges). See European Commission case (DGCOMP) M.4731 Google/DoubleClick (¶ 37-38).

Figure 31. Vertical integration in intermediation in open display



Source: own elaboration.

Note: The blue arrow represents direct agreements between advertisers and publishers. The continuous red arrows show the relationships of the two sides of the market with intermediaries. The dotted red arrow represents communications between servers.

In principle, vertical integration could be pro-competitive because, in general, reducing intermediaries can lower sales margins and transaction costs. In addition, efficiencies can be generated by the specific role of data in this sector, by improving interoperability in terms of cookie matching, information reporting, latency, etc.

But vertical integration, in addition to the above market-power leveraging issues, can undermine the pro-competitive effects of the sequential bidding framework for the purchase and sale of online advertising. This occurs if a vertically integrated operator favours (**self-preferencing**) its own services in **an unjustified way**, thereby hindering competition (foreclosure).

When a publisher ad server (PAS) identifies an opportunity to trade advertising space³⁵², a **sequential auction system with three stages** is launched³⁵³ (Geradin & Katsifis, 2019a; Geradin & Katsifis, 2020b; ACCC, 2021, pp. 52-55):

³⁵² An "impression", i.e., the probability of placing an ad on a piece of content that will be accessed by a user with a given profile.

³⁵³ In a process that could be considered real-time, since ideally (without interoperability or latency issues) its steps should last "milliseconds" (Geradin & Katsifis, 2019a).

- First, advertisers (agencies or trading desks) compete, in general on a CPC (cost-per-click) basis on DSPs, usually in a first-price auction (FPA³⁵⁴), although second-price auctions (SPA³⁵⁵) have also been used in the past.
- Second, DSPs, using that winning bid in their first auction compete, usually on a CPM (cost-per-impression) basis, on the Ad Exchanges/SSPs, usually in a first-price auction (FPA) (CMA, 2020, p. M11), although second-price auctions³⁵⁶ (SPA) have also been used in the past.
- Third, the Ad Exchanges/SSPs, using that winning bid in the second auction, compete, usually at estimated CPM³⁵⁷, on the servers for publishers (PAS). In general (especially after the advent of header bidding, which is a system that allows bids from multiple SSPs to be connected in real time to ensure that the server chooses the best bid) it is a first-price auction (FPA) (CMA, 2020, p. M11), although second-price auctions (SPA)³⁵⁸ have also been used in the past. Those bids coming in from the programmatic

³⁵⁴ In First-Price Auctions (FPA), the winner pays the bid. This may lead the prospective winner to lower its bid to what is necessary to win (bidding only marginally higher than the runner-up so as not to overbid, without revealing the actual willingness to pay).

³⁵⁵ In second-price auctions (SPA), the winning bidder pays the second bid. This is an incentive to reveal the true willingness to pay.

³⁵⁶ DSPs try to optimize their bidding in exchanges/SSPs by lowering the bid received in the first auction to the minimum necessary to win the second auction. This reduction does not have to be passed on to advertisers (or their agencies or Trading Desks), so the DSP keeps an "implicit fee" (take rate). In fact, when the first auction (in DSPs) became a FPA while the second auction (in SSP/exchanges) remained a SPA, the margin that the DSP could keep increased (Geradin & Katsifis, 2019b, p. 7). Another source of the margin is the fact that the first auction is in CPC and the second one in CPM (Geradin & Katsifis, 2020c, pp. 85-87). Although it is true that the transformation between both variables generates efficiencies because maximizing the Click-Through-Rate (CTR) is an indicator of the quality/relevance of the ad (Manne & Wright, 2011).

³⁵⁷ The bid is taken into account together with the probability of a click, as the remuneration may depend on both.

³⁵⁸ SSPs also try to optimize their bidding and keep a hidden fee by submitting a bid to the publisher's server in the third auction (where they can reduce their bid to the minimum necessary to win), below what was paid by the DSP in the second auction. This practice could be selective, without affecting large agents (large advertisers/agencies/DSPs or large more sophisticated publishers having more control), so hidden fees would be higher for smaller agents (CMA, 2020, pp. M84-M85). In any case, some publishers in Spain have pointed out that the change from second-price auctions to first-price auctions has been detrimental because the information on the difference between first and second bids is lost (in second-price auctions, when a high difference between the first and second bids was seen, the reserve price could be raised).

SSP/Exchanges³⁵⁹ can be in competition with direct deals negotiated with agencies or advertisers³⁶⁰. Once the publisher ad server (PAS) has a winning bid, it technically³⁶¹ contacts the winner's advertiser ad server to display the ad in question. Publishers have pointed out that this connection with the advertiser ad server creates fewer discrepancies if they belong to the same company³⁶².

The presence of vertically integrated operators in this framework creates different types of concerns in the transition from the first auction to the second and from the second to the third.

Regarding the **transition from the first auction to the second**, vertically integrated operators (acting as both DSP and Exchange/SSP) may show a number of efficiencies related to technical and data interoperability factors such as cookie matching³⁶³ (which enables targeting and measuring) and reduced latency time³⁶⁴ (ACCC, 2020, p. 22; CMA, 2020, pp. M34-M35). This would generate economic advantages, as network externalities would be amplified by better connection with publishers on the other side of the market. Therefore, the fact that integrated DSPs and exchanges/SSPs (vertically integrated in the same company) match transactions more frequently than with third parties could have justified causes (it would not necessarily imply self-preferencing). That is why, as we have mentioned above³⁶⁵, most players value the integration between a DSP and a SSP as a competitive factor.

However, in a vertical integration context, the DSP has an incentive for self-preferencing its own Exchange/SSP in bidding and, vice-versa³⁶⁶, the exchange/SSP has an incentive

³⁵⁹ The solid red lines in Figure 31.

³⁶⁰ The blue lines in Figure 31.

³⁶¹ The dotted red lines in Figure 31.

³⁶² See section 5.1.a. Although the European Commission considered that there were no interoperability issues at this stage in case M.4731 Google/DoubleClick (¶ 30).

³⁶³ Avoid a 30%-40% loss of bids that are not going to be recognized (AdIC, 2018, p. 60).

³⁶⁴ Avoid a 25% loss of bids that may not materialize because of excessive latency time (AdIC, 2018, p. 60)

³⁶⁵ See section 5.1.a.

³⁶⁶ To what extent the DSP will self-preference its own Exchange/SSP, or the Exchange/SSP will self-preference its own DSP, will depend on the link in the chain where the integrated operator has more market power. In general, it will tend to self-preferencing where it has more market power and less competition, in order to artificially benefit the service's competitiveness (leveraging) where it has less market power.

for self-preferencing the bids of its own DSP (CMA, 2020, pp. M97-M98; ACCC, 2021, p. 15). Different players, both publishers and technological intermediaries, have stated this to the CNMC, although at the same time pointing out the difficulty of proving it in most cases.

The auction at the exchange/SSP could be “adjusted” in several ways (ACCC, 2019, p. 13; ACCC, 2020, p. 20;23):

- On the one hand, with an unjustified restriction on interoperability between the exchange/SSP and the DSP or between these and other integrated services such as DMPs. Although Google claims efforts to ensure the interoperability of its tools, other intermediary platforms have pointed out to the CNMC that Google limits data reporting when the bid of its DSP (DV360) has not ended up in its own exchange/SSP (AdX), which leads the advertiser/agency to prioritize in DV360 that their bids end up in AdX³⁶⁷. Some publishers have also pointed out that they suspect that SSP's algorithms prioritize the demand of their vertically integrated DSP. However, since it cannot be ruled out that this situation is occurring at a supranational level, the most efficient way to analyse this practice may be also from a supranational perspective.
- On the other hand, by giving the DSP informational advantages (because of greater availability of data on past bids on the platform) or strategic advantages (possibility of bidding at the last moment, after the rest of the operators, i.e., last-look advantage, to avoid overpaying).

Although we must consider that the intermediation market also shows network externalities, its eventual disciplining effect³⁶⁸ does not apply in a context of insufficient

The European Commission is investigating Google's possible self-preferencing between DSPs and SSPs:

https://ec.europa.eu/commission/presscorner/detail/en/ip_21_3143

³⁶⁷ Some publishers have also pointed out to the CNMC that this issue implies a greater demand concentration in Google, which highlights the problems of leveraging market power towards the supply side (increasing Google's market power as a publisher ad server).

³⁶⁸ On a theoretical and abstract level, the presence of indirect network externalities could discipline intermediaries. A DSP that, by prioritizing its SSP, were not looking for the best opportunities would lose clients (advertisers and agencies with a certain degree of sophistication and control over their campaigns) and would reduce its attractiveness to the other side of the market, losing publishers, which would mean, once again, less attractiveness for agencies and advertisers. Similarly, an SSP that, by prioritizing its DSP, were not maximizing revenue for publishers would lose publishers, which would reduce its attractiveness to the other side of the market (losing connection with DSPs, agencies and advertisers), again making it less attractive to publishers. However, this disciplining effect fades for intermediaries with market power.

transparency (ACCC, 2021, p. 17) and asymmetric information for the market extremes such as publishers and advertisers and, to a lesser extent, agencies. In this context, vertically integrated platforms can exercise their market power by, for example, unduly benefitting their own integrated services without being penalized by demand.

One of the innovations that has managed to reduce these distortions (such as the risk of vertical integration of DSPs and SSPs) is header bidding (CMA, 2020, p. M96), which gives publishers more control over their revenue sources. Therefore, it is necessary to review possible competition issues of the **transition from the second to the third auction**, where publisher ad servers (PAS) "rank" Ad Exchanges/SSPs.

Nowadays, publishers use dynamic systems that allow connecting with the different SSPs/Exchanges to make the most of the competition³⁶⁹. **Header bidding**³⁷⁰ is one of the most widely used overall: when an opportunity arises to display an ad to a user, it obtains real-time bids from the different SSPs to submit them to the server so that it can compare all demand sources, including non-programmatic ones. This system implies some costs³⁷¹, but the main problem is that Google's SSP/Exchange does not participate with full real-time interoperability in header bidding³⁷², as pointed out by some platforms in their

³⁶⁹The systems that existed initially were a priori less efficient and procompetitive. First, there was a waterfall system, whereby the SSPs did not compete dynamically but were ranked according to their historical profitability for the publisher (Scott Morton & Dinielli, 2020, p. 24), so that the first had priority over the second to buy the "impression" (and the second over the third, and so on). This reduced the risk of inventory left unsold but also the likelihood that SSPs outside the top positions could bid more aggressively with higher prices (as they could only access the inventory if the first SSPs discarded it, and it went down the "waterfall"). In addition, it could be used by the vertically integrated publisher server to favor its own SSP by those historical profitability criteria, also fine-tuning the willingness to pay thanks to the accumulated information about competitors. See Case (4:20-cv-00957), *US Attorneys Gen. (Texas et al) v. Google* (¶ 117) and *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet* (¶ 98-104).

³⁷⁰ Provided by companies such as Amazon or Index Exchange (CMA, 2020, p. 269).

³⁷¹ That extra intermediary has to be remunerated, and there are technical and human costs of implementation, as well as interoperability issues such as latency and reduced content loading speed (Geradin & Katsifis, 2020b; Scott Morton & Dinielli, 2020, p. 25; CMA, 2020, p. M9;M68), cookie matching frictions and/or incompatibility with the AMP mobile format (Scott Morton & Dinielli, 2020, p. 26) or with video, audio and appl inventory. See *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet* (¶ 125-133).

³⁷² See Case (4:20-cv-00957) *US Attorneys Gen. (Texas et al) v. Google* (¶ 153-170), accusing Google of a boycott on header bidding, including an agreement between Facebook and Google not to participate (¶ 171-196). Other ways for Google to reduce the use of header bidding may have consisted of making it difficult (through its server) to access data from publishers using header bidding (¶ 214-217), particularly regarding the performance of Exchanges (¶ 204), or imposing a format incompatible with header bidding (¶ 206-213) for mobile inventory (AMP, Accelerated Mobile Pages).

submission of information to the CNMC, which is in line with other studies (CMA, 2020, p. 284; ACCC, 2021, p. 15). In this case, and given that this situation seems to be occurring at a supranational level, the most efficient way to analyse it may be from a supranational perspective.

To avoid the risks of losing Google's demand, publishers also tend to consider Google's open bidding system.³⁷³ This system has interoperability advantages with the Google's SSP and its demand³⁷⁴ (Scott Morton & Dinielli, 2020, p. 22). The problem with open bidding for publishers is that it connects to fewer SSPs, (CMA, 2020, p. M68), among other things,³⁷⁵ because (as some platforms point out in their information submission to the CNMC) it implies a fee of at least 5%, which can reach 10% in videos and apps (CMA, 2020, p. M68; ACCC, 2021, p. 15), something that does not affect AdX (CMA, 2020, p. 286)³⁷⁶. Besides, although the open bidding system arose, in principle, to eliminate a problem of the previous dynamic allocation systems of the Google server³⁷⁷ that gave its integrated SSP (AdX) last look advantage over the rest³⁷⁸ (Scott Morton & Dinielli, 2020, p. 22), it is not clear that this problem has been solved³⁷⁹ (CMA, 2020, p. 286; ACCC, 2021, p. 142). Within the framework of the information sent to the CNMC by different platforms, they indicate that the last-look advantage that Google's server gives its SSP still exists³⁸⁰. However, once again, it cannot be ruled out that this situation is occurring at a

³⁷³ Formerly called "Exchange Bidding".

³⁷⁴ Better bid-related data and cookie matching on bids received via Google's SSP. See Case 4:20cv957. *US Attorneys General (Texas et al) v. Google LLC* (paras 127 and 128).

³⁷⁵ At the same time, SSPs that are vertically integrated with a DSP are required by Google to submit their bids via AdX (CMA, 2020, p. 286). See also *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet* (¶ 203-204), where they examine other technical costs of open bidding (¶ 205-206).

³⁷⁶ See *US Attorneys General v. Google*, Case 4:20-cv-00957, (¶ 166). See also *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet* (¶ 202).

³⁷⁷ See Decision of the Competition Authority 21-D-11 of June 7, 2021 on practices implemented in the Internet advertising sector (¶ 105-116).

³⁷⁸ Dynamic allocation (which, in turn, arose from the limitations of the previous waterfall system) already allowed connecting to all SSPs, albeit with that last-minute advantage for AdX on the Google server.

See also Case (4:20-cv-00957) *US Attorneys General (Texas et al) v. Google* (¶ 118-120).

³⁷⁹ See Case (4:20-cv-00957) *US Attorneys General (Texas et al) v. Google* (¶ 198).

³⁸⁰ See *Décision de l'Autorité de Concurrence n° 21-D-11 du 7 juin 2021 relative à des pratiques mises en oeuvre dans le secteur de la publicité sur Internet*, where that last-second bidding advantage is discussed (¶ 153-181), including the possibility of reducing AdX's fee dynamically (¶ 182-195).

supranational level, so the most efficient approach would be to analyse it from a supranational perspective.

Therefore, we cannot rule out the risk, once again, of market-power leveraging, in this case from the area of publisher ad servers (PAS) to SSP/Exchanges³⁸¹ (Geradin & Katsifis, 2020b), in turn affecting market power on the demand side, boosting Google's competitiveness as DSP.

In short, although open systems such as header bidding limit the room for self-preferencing, a publisher ad server (where Google has a very relevant share, at least 70% of the market in Spain³⁸²) has incentives to favour its own SSP/Exchange (Geradin & Katsifis, 2019a; Geradin & Katsifis, 2020b).

Apart from the above options, there are other avenues to undermine the effectiveness of dynamic allocation systems, even when they are linked to all demand sources, not only SSPs/Exchanges but also insertion orders that may come from traditional direct negotiation with advertisers/agencies³⁸³:

- Within the framework of the information received by the CNMC, publishers and platforms have warned about the possibility that Google's server prioritizes direct programmatic agreements (deals) to the detriment of open auctions, in order to undermine the header bidding system and reduce the competitiveness of third-party SSPs. However, it cannot be ruled out that this is occurring at a supranational level, so the most efficient approach would be to analyse it from a supranational perspective.
- Another option could be to give priority to these direct programmatic agreements (deals) over traditional insertion orders outside the programmatic ecosystem (as channelling more transactions to the programmatic area benefits Google as SSP).

³⁸¹ See Case (4:20-cv-00957) *US Attorneys General (Texas et al) v. Google* (¶ 257).

³⁸² See section 4.3.d.

³⁸³ The initial dynamic allocation systems only compared SSPs' real-time bidding. Therefore, a separate space (usually the one with the highest demand) was reserved for bilateral agreements negotiated directly (outside of programmatic advertising) between advertisers/agencies and publishers through traditional insertion orders (IO). With the EDA (Enhanced Dynamic Allocation) system, both bids (programmatic and non-programmatic) for the same space could be compared in real time to make the optimal decision, maximizing inventory profitability.

In principle, this type of conduct could be penalized by the publisher if it sees that the server³⁸⁴ is not accepting the most profitable bid, although sometimes there may be more qualitative or complex aspects that make decision-making difficult³⁸⁵. This shows the informational asymmetry for the publisher (ACCC, 2021, pp. 17-18) because, if access to information is restricted³⁸⁶, the publisher may make mistakes in assessing the profitability of certain transactions or inventory³⁸⁷. For example, it may underestimate the profitability of direct private negotiation with advertisers/agencies and use to a greater extent the programmatic ecosystem.

Ultimately, the issue of vertical integration is problematic because of its relation to opacity and lack of transparency. (ACCC, 2020, p. 21).

5.2.e. Possible scope for anticompetitive agreements

Previously, we looked at examples of possible unilateral auction disruption by a vertically integrated operator. But there are also risks of multilateral actions by buyers such as advertisers, agencies or trading desks to try to lower their bids. The budgets of competing advertisers end up centralized in a few Trading Desks, (Decarolis, Goldmanis, & Penta, 2018), which also have relevant information.

There is also room for other more subtle and opaque forms of concerted practices on the part of advertisers (or their agencies). It would be a matter of not using the "competitive advertising" phenomenon, whereby companies pay to appear in the results when searching for a competitor (Simonov & Hill, 2018). That is why companies also pay when their own name is searched for, sometimes paying a premium to appear first or exclusively (to prevent a competitor from appearing first). If all companies adopt the same strategy, they may end up achieving no differentiation (although they are all paying to show their

³⁸⁴ At the time, the European Commission (DGCOMP) case M.4731 Google/DoubleClick dismissed this risk because such conduct would be detected and penalized by publishers (¶ 317, 323) given the degree of server competition (¶ 291,310).

³⁸⁵ Such as brand safety aspects on the integrity of the advertiser or the relevance and estimated click probability.

³⁸⁶ See Case (4:20-cv-00957) *US Attorneys General (Texas et al.) v. Google* (¶ 125-129). In Italy, the Competition Authority has opened an investigation against Google for discriminatory use of data by excluding access to unencrypted identifiers and user tracking tools (third-party tracking pixels). See <https://en.agcm.it/en/media/press-releases/2020/10/A542>.

³⁸⁷ See Case (4:20-cv-00957) *US Attorneys General (Texas et al) v. Google* (¶ 144-152).

own ad), so the temptation is to strike a deal to prevent any company from advertising when searching for competitors' brands³⁸⁸.

These types of agreements can impair the consumer's ability to discover new brands or products. By limiting the number of ads, the search costs for the consumer increase. This can lead to suboptimal decisions, harming welfare and allocative efficiency³⁸⁹. In addition, they reduce consumers' switching ability and company entry, undermining dynamic efficiency³⁹⁰.

In general (Colangelo, 2020), there has been a tendency to view this type of conduct that restricts trademark or keyword advertising as anticompetitive. The main cases³⁹¹ have occurred in the United States (contact lenses³⁹²) and in Portugal (telecommunications companies³⁹³). In the EU³⁹⁴ the anticompetitive logic of this type of restrictions has been pointed out, being admissible only if aimed at limiting risks of fraud and consumer confusion³⁹⁵.

³⁸⁸ Strategies could be (Colangelo, 2020; CMA, 2017) narrow (the advertiser does not bid when users search for a competitor's trademark) or broader (the advertiser does not bid when users search for a competitor's trademark or associated common words).

³⁸⁹ Optimal use of resources in those activities where they are most valuable.

³⁹⁰ Generating optimal incentives to make optimal long-term decisions, competing and investing in the most productive activities.

³⁹¹ Studies have analyzed broadband, credit cards, energy, flights, and home insurance for the UK (CMA, 2017) and the hotel sector for the Netherlands (Haasbeek, Sviták, & Tichem, 2019). This type of agreements may affect sectors where price comparators and vertical search engines are relevant.

³⁹² See case (18-3848 of 1-800 *Contacts, Inc. v. FTC*).

https://www.ftc.gov/system/files/documents/cases/1-800_contacts_ca2_ftc_answering_brief_10-7-19.pdf.

Although the courts have not found this conduct to be anticompetitive.

<https://www.courthousenews.com/wp-content/uploads/2021/06/keywordsearches.pdf>

³⁹³ See

http://www.concorrenca.pt/vEN/News_Events/Comunicados/Pages/PressRelease_202011.aspx.

³⁹⁴ The European Commission has pointed out the anti-competitive logic of such agreements in its sector investigation on e-commerce (European Commission, 2017). The CJEU has ruled the same way, albeit in the context of trademark disputes (Colangelo, 2020).

³⁹⁵ See also the European Commission (DGCOMP) case AT.40428 Guess, where the likelihood of consumer confusion was ruled out in the fact that resellers could use the trademark as a keyword to advertise, given that they sold authentic products (¶ 117).

6. Conclusions

Our analysis of the online advertising sector, with a special focus on the Spanish market, allows us to draw a series of conclusions.

On the positive side, online advertising implies substantial efficiencies that should be preserved.

However, at the same time, there are a number of risks to competition that may end up hurting efficiency overall and, in particular, consumer welfare:

- The sector tends to concentrate in very few players, largely due to the role played by the accumulation of data as a competitive variable.
- There is a problem of opacity and lack of transparency in the sector.
- There are possible risks to competition in online advertising because of incentives to extend market power from one market to another (leveraging) and discrimination in favour of own services (self-preferencing).
- Competition issues in the sector, together with the prevalence of business models based on the exhaustive accumulation of data, may end up reducing consumer welfare.

Next, we discuss these conclusions in more detail.

6.1. Online advertising implies substantial efficiencies

Digitalization in the field of advertising has been a huge disruption, providing advertising with new features such as the ability to personalize and track campaign performance, and helping the entry of new players and media. It has also enabled the emergence of new forms of contracting, which have moved from the physical to the digital space.

The entry of new players and media has led to product innovation, broadening the possibilities for advertisers and consumers. This has a disruptive effect on traditional operators, which have to reduce their sale margins, cut costs and innovate and modernize the way they provide their services (Goldfarb & Tucker, 2011).

Also, the ability to personalize implies a product innovation, which benefits all industry players. Advertisers (and their agencies) can reach their target audience more effectively. Publishers can better monetize their inventory and increase their funding to provide better content. Consumers can enjoy that better content and find ads less "annoying" because they are more relevant to their interests.

New business models based on online advertising also have positive effects for consumers, because they allow them to access certain highly valued services such as search engines, social media and audiovisual content at zero cost.

On the other hand, programmatic technology is a process innovation that enables a multitude of buying and selling orders to be matched more efficiently and in real time. This reduces transaction costs for both sides of the market, advertisers (and agencies) and publishers.

Finally, the ability to measure the effects of advertising leads to better decision making by industry players. Advertisers (and their agencies) receive signals as to where their investment is most productive, while publishers should learn which inventory is most profitable.

All this leads to greater efficiency in advertising, which has positive effects on the entire economy by boosting competition. Advertising is particularly necessary for start-ups, small or innovative companies (CMA, 2020, p. 45) to publicize their new products or services and thus disrupt the position of more established operators.

6.2. The sector tends towards concentration in a few players, largely due to the role of data

The sector has a high degree of concentration, and it is estimated that two companies (Google and Facebook) may account for over 70% of revenues in Spain³⁹⁶.

Analysing data by segments:

- In search advertising, Google captures more than 90% of revenues in Spain³⁹⁷.
- In display advertising, Facebook accounts for over 40% of revenues³⁹⁸, with a much larger share than other platforms/publishers. Google is also present in display advertising, with its YouTube platform (relevant for video advertising). But Google

³⁹⁶ In the United Kingdom, Google and Facebook's share is estimated to be around 80% (CMA, 2020, p. 9).

³⁹⁷ In similar figures to the United Kingdom (CMA, 2020, p. 224), Australia (ACCC, 2020, p. 8) and France (*Décision de l'Autorité de Concurrence n°19-D-26 du 19 décembre 2019 on Google Ads*, ¶ 312; 321). In the US estimates point to an indicative percentage around 85% (See *38 US Attorneys General v. Google*, ¶ 96).

³⁹⁸ In the UK, Facebook accounts for 35-40% of display advertising and Instagram for 10-15% (CMA, 2020, pp. 245-246), meaning Facebook could exceed 50% of display advertising. In Australia, Facebook's share is estimated at 51% of display advertising (ACCC, 2019, p. 9).

stands out especially for its share in intermediation services it provides to advertisers/agencies and publishers: over 70% as an advertiser ad server; over 60% among DSPs and buying tools; over 50% in sales tools such as Ad Networks and SSPs (over 70% among generalist SSPs); and over 70% as a publisher ad server³⁹⁹.

This degree of concentration is exceptional and unparalleled in other sectors, more so considering that it is a sector that has emerged in the last 20 years and is in a phase of intensive growth, quite different from other concentrated sectors (such as finance, telecommunications or energy) that come from heavily regulated environments or former monopolies. These companies have achieved this market share by relying on their ability to innovate (driven by digitalization) and to offer attractive products to the different consumers and companies (advertisers/agencies and publishers) that use their services. Also relying on the integration of supplementary services, expansion into other markets and the acquisition of current or potential competitors through business concentration.

But this market share also shows that these positions are difficult to challenge because of the dynamics of the sector. Economies of scale and scope lead to large operators integrating services, but the main cause of this concentration is the combination of network effects and the role of data. Platforms capable of attracting more users increase their competitiveness for advertisers, not only because they can reach a larger audience but also because they can better target advertising because of the greater accumulation of data. Better funded platforms with better advertising (more relevant and less annoying) will, in turn, attract more users, which, again, increases audience and data accumulation, generating a feedback spiral.

These same effects explain why some of these platforms that are successful in attracting audiences are also engaged in intermediation of third-party space (most notably Google, but also Amazon and, to a lesser extent, Facebook). The accumulation of data increases their competitiveness in the purchase and sale of targeted advertising in third-party inventory.

Therefore, data are of great significance, as they can introduce certain interoperability problems when different providers are used. This generates switching costs and a tendency to concentrate or integrate services into a single provider (single-homing).

All of this underscores that data can be a barrier to entry and growth in the industry (CNMC & ACCO, 2020). Data are an indicator of market power: companies with more and better

³⁹⁹ These figures are similar to those obtained in the United Kingdom (CMA, 2020, p. 266) and Australia (ACCC, 2021, p. 12).

data can increase their margins without incurring a significant cost in terms of customer churn. Data dependence in the sector can manifest itself in other aspects:

- The importance of certain company mergers and acquisitions to expand the user base or consolidate service integration.
- The disruptive role on the entire industry that a single company like Google can play if it decides to eliminate third-party cookies in its browser (Chrome).
- The use of data in conducts potentially harmful to competition.

6.3. The sector is marked by opacity and lack of transparency

Players at both ends of the value chain face the problem of asymmetric information that hinders their optimal decision making and reinforces the market power of platforms and intermediaries:

- Advertisers and, to a lesser extent, agencies do not have full information about the destination of their investment, especially when it comes to allocation of the budget between intermediaries and the end publisher. The problem is greater for smaller advertisers. On the one hand, they lack the sophistication to know the end medium where their ad has run (Google or Facebook buying tools that offer access to third-party inventory merely allow filtering contexts or profiles). On the other hand, they do not have the resources to hire independent tracking or verification, so they have to rely on the platform estimates (that have an obvious incentive to inflate impact). All this leads small advertisers to use a conversion-to-observable-action based advertising (in formats such as search or retargeting that offer very visible results, e.g., in terms of clicks or registration) to be able to directly see ad impact.
- Medium-sized publishers (other than platforms with large global audiences) that market their inventory on open display do not have full information either about the final advertiser's (and their competitors') willingness to pay, which makes it difficult to make decisions to optimize their inventory.

In short, while platforms that share their own inventory directly capture the budget of advertisers or agencies, there is a gap in open display between what the advertiser pays and what the publisher receives. Remuneration for the various intermediaries can be between 30%-40% of the advertising spending⁴⁰⁰ (so that the publisher would only receive

⁴⁰⁰ See section 4.3.e.

60%-70% of the advertiser's committed spending). The problem is not so much the amount of this remuneration (as intermediaries also add value with programmatic transaction matching and audience profiling data) but the lack of transparency on the remuneration of the different intermediaries, as it hinders optimal decision making and can consolidate the market power of certain operators, particularly vertically integrated ones.

Moreover, the lack of transparency, apart from affecting certain aspects of intermediaries' remuneration or the destination of the investment, may also involve the discriminatory imposition of certain conditions or technical standards that unduly restrict interoperability.

Finally, it should be noted that, on occasion, advertisers may also anticompetitively restrict transparency. For example, when two competing companies avoid "competitive advertising" (showing an ad when searching for the competitor). This type of conduct may be more frequent in online advertising for two reasons. First, because it can be implemented through algorithms, which generates greater opacity (CNMC & ACCO, 2020). Second, because of the infinitely repeated interaction nature of real-time auctions, which generates more incentives for this form of collusion.

6.4. There are risks to competition, such as leveraging of market power and discriminatory self-preferencing of own services

Horizontal and vertical integration and concentration may generate incentives to or risks of competition-distorting conduct.

First, most platforms trade their own inventory exclusively, without opening it up to other intermediaries. At the same time, some of these platforms (especially Google but also Amazon and, to a lesser extent, Facebook) are engaged in intermediating third-party inventory. As a result, they uniquely combine simultaneous access in the marketplace to their own attractive space, with large and well-profiled audiences, and to third-party inventory. This leads many advertisers or agencies to use them as priority buying tools or even exclusive⁴⁰¹ (single homing), especially in the case of advertisers. In short, platforms can leverage their market power on the supply side (as publishers) to extend it to the position of their ad buying tools. There could also be a potential conflict of interest if these platforms' buying tools (which link to their own and third-party ad inventory) skew demand to favour their own ad inventory.

⁴⁰¹ See section 4.3.b.

These issues can be exacerbated by the vertical integration that marks intermediation of ad buying and selling in open display (the inventory of publishers that tend to have a national audience, as opposed to platforms with a global audience). The remarkable presence of a player such as Google on both sides of the market, with relevant shares in the services provided to advertisers/agencies and publishers, gives it room to extend its market power. Its share on the demand side (concentration of advertiser/agency budgets) strengthens its market power on the supply side, as publishers will opt for its services to minimize the risk of loss of demand due to interoperability issues. Its market power on the supply side (concentration of publishers' supply) allows it to apply conditions that strengthen its competitiveness on the demand side towards advertisers or agencies (such as less data sharing with third parties).

Sometimes, vertical integration can encourage discriminatory conduct in favour of the services themselves. In open display, intermediaries order their bids in a sequential auction system. Vertically integrated operators may have incentives to favour their own services. Although such conduct could, in theory, be penalized by advertisers/agencies and publishers (if they are not necessarily accessing the best option), the market power and interoperability advantages of a vertically integrated operator limit the ability of advertisers/agencies and publishers to switch to alternative providers. In addition, the lack of transparency affecting them may also turn it more difficult to make optimal decisions when choosing their intermediaries.

6.5. Competition issues in the online advertising sector may end up reducing general and consumer welfare

Competition issues in online advertising may even reverse the efficiencies described in the first conclusion and end up reducing general and consumer welfare.

First, costs may be higher for advertisers compared to an alternative scenario of greater competition, and they are likely to pass them on (in whole or in part) as higher prices for end goods, eroding consumer welfare. The effect of insufficient competition is more severe for small advertisers (Prat & Valletti, 2018), that tend to pay higher fees and suffer most for the problems of opacity and lack of transparency. Therefore, the role of advertising as a driver of competition is impaired: if companies (especially start-ups, small or innovative companies) find it more difficult to advertise their products, efficiency and general welfare suffer throughout the economy, particularly for consumers, who will see their ability to make optimal choices from a wider range of products curtailed.

Moreover, the fact that publishers also experience competition problems in trading their ad inventory can ultimately undermine overall welfare. Publishers may reduce their content creation, with a negative impact on consumers, or their advertising space, with a negative impact on advertisers.

Apart from these effects, it is clear that business models based on online advertising require a heavy load of attention and data disclosure from the consumer (Goldfarb & Tucker, 2011). Therefore, the fact that the consumer does not pay a monetary price for some services does not imply that consumer welfare is maximized, as the platforms' market power may allow them to increase ad load and, especially, the accumulation of data. In an environment of greater competition (Economides & Lianos, 2020; Economides & Lianos, 2021), consumers could even be better compensated for the use of their data, or they could have a wider menu of privacy, price and ad load alternatives, unlike the current model where the only option to enjoy certain digital services necessarily involves surrendering personal data (take-it-or-leave-it choices).

In short, in a more competitive environment than the current one, online advertising would allow for better results in these terms (CMA, 2020, pp. 69-70):

- Lower prices and better conditions for advertisers, which would mean lower prices for end goods and services and greater consumer choice.
- Better conditions for publishers, that will be able to invest in better content creation, generating welfare for consumers and for society as a whole.
- Improved conditions and greater consumer choice in terms of attention and data required to provide certain services (related to or funded by online advertising).

In an environment of greater competition than the current one, online advertising would be marked by greater business entry, dynamism and innovation. These efficiency gains would be felt throughout the economy, because of the key role advertising plays in driving competition in all sectors.

7. Recommendations

The magnitude and complexity of the challenges associated with competition issues in online advertising make it necessary to consider measures to address them in five areas. These measures should not be seen as exclusive; on the contrary, they are complementary in nature, (Fletcher, 2020) and their joint application will be more productive:

1. Competition authorities must continue to enforce competition policy vigorously as the first line of defence in the online advertising market.
2. Regulation of digital platforms likely to generate competition problems is a complementary tool to competition policy.
3. National and European lawmakers must consider the complex relationship between consumer and privacy protection and the promotion of competition in digital markets in order to empower consumers and ensure their maximum welfare.
4. A multidisciplinary and cooperative approach must be adopted by the institutions involved.
5. The powers and means of the competition authorities must be strengthened.

Each of these recommendations is explained in detail below.

FIRST. Continuous and decisive action by authorities enforcing competition policy as the first line of defence in the online advertising market

Competition policy is an effective tool as a first line of defence against some of the issues raised by online advertising. This policy offers the flexibility to assess, on a case-by-case basis, the anticompetitive effects of a conduct or market context against the potential efficiencies that may result.

The complexity of the challenges associated with a market such as online advertising can be addressed by national competition authorities by making use of all the available instruments on different fronts in order to ensure market contestability (by reducing barriers to entry or switching costs). Specifically, merger scrutiny in case of concentration dynamics in the sector (analysed in section 6.2) or the use of interim measures or remedies, if necessary, in case of anticompetitive conduct (analysed in section 6.4).

7.1.a. Scope of merger analysis in the digital sector

National⁴⁰² and supranational competition authorities should have the power to analyse⁴⁰³ all mergers that may distort effective competition in a sector such as online advertising, which is relatively concentrated and has potential competition problems⁴⁰⁴.

In the area of merger control, the turnover of the companies involved in the transaction is one of the essential criteria for determining whether notification to the competition authority is mandatory. However, experience in the digital sector shows how operators that do not have significant turnover can be an important source of actual or potential competition in digital sectors. For example, in the field of online advertising, potentially anticompetitive mergers can take place between companies that, without having high revenues, are relevant in terms of their share of users, network traffic or impressions.

For this reason, it seems desirable that, together with turnover, there should be other criteria to allow competition authorities to analyse potentially problematic mergers. The merger notification threshold in Spain, which includes not only turnover but also a market share criterion⁴⁰⁵, helps identify mergers that may pose risks to competition.

7.1.b. Consideration of interim measures in case of potentially anticompetitive practices

Competition authorities considering interim measures⁴⁰⁶ (which involves imposing remedies to interrupt potentially anticompetitive conduct even if a final ruling has not yet been issued) can be extremely important in digital sectors such as online advertising. The impact of network effects, amplified by the relevance of data and the importance of interoperability, can cause a given conduct by a preponderant operator to quickly alter

⁴⁰² An example of a transaction analyzed by the CNMC is file C/1028/19: PRISA/VOCENTO/GODÓ, a joint venture for trading programmatic advertising set up by different Spanish publishers.

See <https://www.cnm.es/expedientes/c102819-0>

⁴⁰³ The approach on mergers does not necessarily have to be more restrictive, since this could be counterproductive if it discouraged the strategy of certain companies that energize competition before being bought out (Bourreau & de Stree, 2019).

⁴⁰⁴ Mergers, in general, are relevant in digital markets because of several factors such as multi-sided markets, horizontal or vertical integration or the relevance of data.

⁴⁰⁵ See Article 8.1 of [Law 15/2007, of July 3, 2007, on the Defense of Competition](#).

⁴⁰⁶ See Article 54 of [Law 15/2007, of July 3, 2007, on the Defense of Competition](#).

competitive dynamics and tip the market towards one or a few dominant companies (Bourreau & de Stree, 2019).

When there is sufficient evidence of the unlawful and anticompetitive nature of a conduct, the competition authorities may adopt measures that are proportional to the harm to be avoided. However, we should bear in mind that adopting interim measures requires a high standard of proof, so it will be more feasible in cases in which the conduct is more evident and the possible harm to competition is immediate. Interim measures must be reasoned, proportionate and limited in time, aimed at ensuring the effectiveness of the resolution that will be issued in due course, without adopting measures that may cause harm that is difficult or impossible to repair⁴⁰⁷.

7.1.c. Consider remedies for potential anticompetitive practices

When an anticompetitive conduct is identified, competition authorities have the power to impose not only sanctions but also remedies on the specific company⁴⁰⁸ which has violated competition law. Such remedies may be structural (e.g., accounting or operational separation, divestitures in subsidiaries, assets or business branches) or behavioural (which regulate company conduct without affecting its structure).

The complexity of business models and competitive dynamics in online advertising may make the use of remedies for anticompetitive conduct necessary to solve future competition problems.

Among the structural and behavioural remedies available in each case, competition authorities have to opt for the most effective and least distortive in redressing anticompetitive conduct. In such dynamic areas as online advertising, as in other digital markets, structural remedies may, however, entail a reduction of the efficiencies generated by network externalities and data integration (de Stree, 2020). For their part, although behavioural remedies entail greater monitoring obligations to verify compliance, they are more flexible. And that flexibility can be useful in a sector as complex as online advertising, to ensure that the solution adopted is the least distortive within the feasible enforcement options.

Among the behavioural remedies that competition authorities may consider in a sector such as online advertising (Geradin & Katsifis, 2020b) is imposing greater transparency

⁴⁰⁷ See article 54.2 of [Law 15/2007, of July 3, 2007, on the Defense of Competition](#), as amended by article 1.9 of Royal Decree-Law 7/2021, of April 27, 2021.

⁴⁰⁸ Article 53.2.b) of [Law 15/2007, of July 3, 2007, on the Defense of Competition](#).

(towards clients, advertisers or agencies/publishers) on an intermediary with market power over the actual remuneration of its different services (especially opaque if there is vertical integration) or other variables⁴⁰⁹. Other remedies for preventing tying and bundling services or self-preferencing may require imposing certain interoperability requirements to ensure non-discriminatory treatment of other third parties in the value chain:

- For example, if necessary, integrating services that are usually provided as a bundle could be restricted⁴¹⁰.
- For services that are in adjacent links of the value chain, the ability of a vertically integrated operator to promote its own services (ACCC, 2021, p. 21) can be restricted by establishing interoperability or data portability measures⁴¹¹. This interoperability and data portability could be extended to the final services of some of these platforms (such as messaging or social media) to ensure less unbalanced dynamics in the accumulation of data.
- An additional remedy to the two previous ones could be restricting the combination of data generated separately by these services by establishing data silos (CMA, 2020, p. 24; ACCC, 2021, pp. 20-21) or, alternatively, that third parties be allowed access in terms of full interoperability (to prevent that combination of data from providing a competitive advantage with which market power can be leveraged along the value chain).
- Another remedy related to the separation of services could be to split access to the ad inventory of platforms which are leveraging their market power into buying tools⁴¹² (DSPs).

⁴⁰⁹ As performance indicators or more information to advertisers/agencies about the destination of their investment or more information to publishers about the source of their demand.

⁴¹⁰ On the demand side, it is common to bundle buying tools (DSPs, Demand Side Platforms) with data analysis (DMPs, Data Management Platforms) or advertiser ad servers (AAS). On the supply side, there are platforms for trading advertising inventory (SSPs, Supply Side Platforms) that integrate publisher ad servers (PAS).

⁴¹¹ For example, between PASs and SSPs, establishing full server interoperability with third-party SSPs, or between SSPs and DSPs, so that purchasing tools link to all platforms (Geradin & Katsifis, 2020b).

⁴¹² This remedy could be considered behavioral (Geradin & Katsifis, 2020b) in the sense that it entails an "obligation" to negotiate access to one's own inventory and open it up to other intermediaries instead of the exclusive access currently in force (Geradin & Katsifis, 2020b), although (like most of the behavioral remedies mentioned) it also has a structural side (CMA, 2020, p. 28) in terms of "unbundling."

Structural remedies (such as accounting or operational separation) have been proposed by other authorities and experts in case of serious conflicts of interest or leveraging of market power.

- Authorities have raised the possibility of separating the campaign buying function (DSPs, Demand-Side Platforms) from publisher ad servers (PAS) in cases where market power is undermining competition (CMA, 2020, p. 28).
- Some authors have suggested separating the inventory sales function (SSPs, Supply Side Platforms) from the publisher ad servers (PAS) in cases where dominant positions are undermining competition (Geradin & Katsifis, 2020b).

All these remedies can be useful to alleviate competition problems (analysed in section 6.4) and opacity and lack of transparency (analysed in section 6.3). In any case, the solution of imposing remedies invites reflection, as many jurisdictions are doing (notably the EU), on whether some of these remedies should be included in a regulatory scheme to become mandatory *ex ante*, without the need for a competition investigation.

SECOND: Complementarity of competition policy tools with the regulation of digital platforms susceptible of generating competition problems

Ex-ante regulation of digital markets has the potential for improving competitive outcomes in sectors such as online advertising (CNMC, 2020). Regulation does not exclude the application of competition rules; on the contrary, both have a complementary nature.

The European Commission's proposal for a regulation on contestable and fair markets in the digital sector (Digital Markets Act or DMA⁴¹³) may contribute to achieving the objective of greater effective competition in these markets.

7.2.a. Regulation to increase competition in digital markets should focus on large, systemically important platforms

Regulations of a horizontal nature (i.e., applicable to most or all operators), such as the P2B Regulation⁴¹⁴, are necessary to establish the essential rules of the game, e.g.,

⁴¹³ See

https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/digital-markets-act-ensuring-fair-and-open-digital-markets_es

⁴¹⁴ Regulation (EU) 2019/1150 of the European Parliament and of the Council of June 20 2019 on promoting fairness and transparency for professional users of online intermediation services.

transparency requirements, data protection and other horizontal obligations (including refraining from restricting the ability of commercial users of the platforms to file complaints with public authorities).

In digital markets such as online advertising, where there is a high asymmetry in the market position of the different operators, competition can be strengthened by establishing regulatory obligations on large operators. This is why enforcing the DMA is aimed solely at systemically important platforms (gatekeepers).

In addition, regulatory obligations of this kind, such as the DMA, even if acting only on gatekeepers, can be effective in enhancing transparency and interoperability issues across the online advertising sector and also in fostering improvements in medium-sized firms (making horizontal regulation less necessary).

7.2.b. Regulation of large digital platforms should be based on competitive principles

The current DMA proposal includes in its scope of action online advertising and related or adjacent services⁴¹⁵ as "core services," in which platforms with a significant market power⁴¹⁶ in the EU internal market (gatekeepers) are obliged to a series of conducts⁴¹⁷. The following stand out among the conducts that the DMA proposes to regulate and that may improve the performance of the advertising sector in terms of competition:

- Improved online advertising transparency⁴¹⁸, e.g., including the obligation to provide advertisers and publishers with information on the remuneration of the different services provided by the intermediary (so that the advertiser also knows the publisher's final payment) and access to performance measurement instruments that allow their own independent verification. These measures can be useful in alleviating opacity and lack of transparency concerns (discussed in section 6.3).

This "P2B Regulation" (Platforms to Business) imposes a series of transparency and non-discrimination obligations on platforms that link commercial users with end users, although it excludes online advertising from its scope.

⁴¹⁵ Such as marketplaces, search, social media, video sharing or number-independent interpersonal communications.

⁴¹⁶ By revenue or capitalization and by the number of end and commercial users.

⁴¹⁷ These conducts are included in articles 5 and 6 of the European Commission's DMA proposal. The difference between the two articles is that enforcement of the obligations listed in article 6 can be modulated following a "regulatory dialogue" between the European Commission and the gatekeeper.

⁴¹⁸ See Articles 5.f and 6.g of the European Commission's DMA proposal.

- Interoperability obligations⁴¹⁹, e.g., by imposing the obligation to ensure and facilitate effective portability of the data generated (not only of end consumers but also of commercial users) and to allow commercial users (or their authorized third parties), access and effective use of the (aggregated or non-aggregated) data on a continuous, real-time basis provided or generated by the activity of commercial users on the platform (and by end users interacting with those services, if they have given their consent). These measures may be useful to address certain competition problems (discussed in section 6.4) and limit the concerns generated by the accumulation of data for market concentration (discussed in section 6.2) and for consumer welfare (as noted in section 6.5).
- Obligations concerning data accumulation⁴²⁰, e.g., restricting the combination of personal data from different services, unless the user has given consent to this specific option; preventing mandatory identification or registration services; allowing software and application changes (uninstallation, installation, subscription) on devices and operating systems; ensuring full interoperability of supplementary services and granting access to anonymized data on search results. These measures can be useful in limiting the concerns that data accumulation generates in terms of market concentration (discussed in section 6.2) and consumer welfare (as noted in section 6.5).
- Horizontal obligations, such as refraining from restricting the ability of commercial platform users to file complaints with public authorities⁴²¹. These measures may be useful to limit the concerns generated by imbalances in bargaining power due to market concentration (discussed in section 6.2).
- Minimization of conflicts of interest, e.g., by preventing discriminatory treatment between their own and third-party services in bid rankings or ordering⁴²². These measures may be useful to address certain competition problems (discussed in section 6.4).

Although these solutions could also be incorporated as remedies in competition resolutions to be imposed on an operator after a specific case-by-case analysis, implementing them

⁴¹⁹ See Article 6.h and 6.i of the European Commission's DMA proposal.

⁴²⁰ See articles 5.a, 5.e, 5.f, 6.b, 6.c, 6.e and 6.f and 6.j. of the European Commission's DMA proposal.

⁴²¹ See Article 5.d of the European Commission's DMA proposal.

⁴²² See Article 6.d of the European Commission's DMA proposal.

with an *ex ante* regulatory scheme seems to offer benefits, especially in transparency and interoperability.

Measures aimed at achieving greater transparency for advertisers and publishers are particularly important to help these players make optimal decisions (budget and inventory management), increasing efficiency and competition (ACCC, 2021, p. 21). A better functioning market in this regard will mitigate other problems and reduce the need for other measures. For instance, with better information on ad pricing and performance, advertisers and publishers will be able to penalize potentially problematic conduct (e.g., a vertically integrated operator unduly favouring its own services). It is true that greater transparency may encourage collusion⁴²³ (Ivaldi, Jullien, Rey, Seabright, & Tirole, 2003); however, in this case, this risk could be considered reduced because of two factors:

- This is a private transfer of information from intermediaries to their clients (advertisers/agencies and publishers) and not information disclosed to the market that can be used as a reference price⁴²⁴.
- Transparency may favour collusion in more standardized products but not so much in differentiated goods (Ivaldi, Jullien, Rey, Seabright, & Tirole, 2003). Online advertising has a high degree of differentiation. There are specificities of each format (search, display, classifieds and others) and technical differences⁴²⁵. The main platforms and publishers⁴²⁶ also differ in terms of quality and potential audience, and investment opportunities to impact different audience profiles in a wide variety of contexts arise every second.

Data portability and interoperability measures (ACCC, 2021, p. 20) can also, if appropriately and proportionally designed, help bring about optimal decisions in terms of competition and efficiency, reducing switching costs and facilitating different operators simultaneously providing the same service (multi-homing). A certain technical standardization that does not harm competition could also minimize distortions that affect

⁴²³ For example, two competing advertisers pooling this information to reduce their bids for advertising space.

⁴²⁴ Collusion would not be tacit but necessarily explicit; advertisers would have to expressly share this information.

⁴²⁵ For example, within search and classified advertising, text ads are combined with other richer formats (e.g., boxes or carousel). In display advertising, there are social network formats, video, banners, images and rich media, native advertising, branded content or even text links. See section 3.1.

⁴²⁶ Within open display, there are different avenues for buying ads, from traditional insertion orders (from advertisers/agencies to publishers) to auctions or deals in the programmatic ecosystem (CMA, 2020, pp. M13-M14). See section 3.2.

agents' operation. Again, a better functioning of the market in this sense will mitigate other problems, such as the advantages of a vertically integrated operator (unduly favouring its own services or restricting interoperability with third parties). Agents would be able to better perform proper verification, identification and attribution of transactions (ACCC, 2021, pp. 22-24).

7.2.c. The regulation of large digital platforms must preserve the single market in the European Union.

The competition challenges faced in the online advertising sector are similar in many EU Member States, and the most prevalent platforms in this sector typically operate in a pan-European context.

Therefore, in order to maintain and strengthen the internal market, it is advisable to adopt an EU approach. This is not an obstacle for national competition authorities to continue enforcing competition law in addition to participating in the application of other intervention mechanisms⁴²⁷ (which would make it possible to reinforce consistency and coordination between competition rules and a potential regulation) or of other potential intervention mechanisms in the digital sector at the national level.

7.2.d. There is a need for a coordination framework between antitrust tools and the regulation of large digital platforms.

Competition rules are enforceable in all economic sectors. However, when regulation pursues similar objectives to competition rules, both tools must operate in a consistent and coordinated manner.

In the interest of legal certainty and the effectiveness and efficiency of competition and regulatory tools, mechanisms must be provided to give consistency and coordination to the intervention of the authorities that enforce them.

⁴²⁷ See the recent [statement](#) adopted by the EU National Competition Authorities within the European Competition Network (ECN): Joint paper of the heads of the national competition authorities of the European Union. How national competition agencies can strengthen the DMA (June 22, 2021).

THIRD. National and European lawmakers should consider the complex relationship between consumer and privacy protection and the promotion of competition in digital markets in order to empower consumers and ensure their maximum welfare

7.3.a. Data protection and privacy regulation must factor in the effects and incentives generated on agents

The protection of consumers and their personal data privacy constitutes a horizontal policy enforceable on the entire economy. But these policies affect competition in sectors such as online advertising that are very intensive in data-accumulation to optimally target and track campaigns. Some authors (Gal & Aviv, 2020; Geradin, Katsifis, & Karanikioti, 2020b; Batikas, Bechtold, Kretschmer, & Peukert, 2020; Johnson & Shriver, 2020) have shown that there is evidence that the EU data protection regulation (GDPR⁴²⁸) may have benefited platforms with large audiences⁴²⁹ to the detriment of smaller publishers⁴³⁰. This could also imply that the disclosure of data to platforms is also significant without, at times, the consumer being fully aware of it⁴³¹.

Therefore, to be truly effective, European and national lawmakers on data protection matters must consider the incentives generated in agents' conduct and, therefore, its impact on competition in digital markets such as online advertising. This does not necessarily imply reducing the protection of a good such as consumer privacy. On the contrary, it is about empowering consumers and making them more aware of the use and value of their data. One way to achieve this is to ensure effective compliance with European data protection regulations (Krämer, Schnurr, & Broughton Micova, 2020, pp. 14,105), e.g., with regard to facilitating data portability⁴³².

⁴²⁸ GDPR (General Data Protection Regulation). Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data.

⁴²⁹ They already collect data from consumers (and their consent for exploitation) with the registration process on the platform, so they accumulate data while the session is logged in (AdIC, 2018, p. 6; Geradin & Katsifis, 2020b), even beyond their own inventory (ACCC, 2019, p. 7).

⁴³⁰ That they have to require consent for the processing of personal data each time the site is visited, unless they use a "registration wall", forcing/inviting/encouraging users to register and log in (Kemp, 2020).

⁴³¹ Some of these platforms are capable of collecting user data beyond their own inventory (ACCC, 2019, p. 7). See section 3.3.

⁴³² See article 20 of the GDPR on data portability.

7.3.b. Reinforced asymmetric obligations for the most relevant operators may be preferable to horizontal regulation.

Imposing additional obligations in terms of privacy should avoid creating excessive burdens on less systemically important operators. The proposed DMA, which only imposes obligations on gatekeepers, may be an appropriate vehicle by restricting the combination of personal data from different services, unless the user has consented to this specific option⁴³³. Also, enhanced obligations for gatekeepers can ensure effective implementation of data portability and interoperability principles, also in real time (as proposed by the DMA⁴³⁴).

7.3.c. Competition enforcement and advocacy can improve consumer outcomes, also in terms of privacy

Online advertising-based business models are very data-intensive. Without necessarily undermining the efficiencies brought on by this exploitation of data (to improve advertising targeting and measuring), it would be desirable for consumers to have more and better real choices of alternative models, rather than the consumption of services being necessarily linked, in virtually all cases, to transferring personal data (Economides & Lianos, 2020). In fact, promoting greater competition in the sector would have the benefit of allowing the development of alternative operators and models that provide consumers with more real alternatives: either options to enjoy the service (e.g., with a positive monetary price) without the need for data transfer, or the possibility that consumers who voluntarily opt for the transfer of their personal data being compensated for it to a greater extent, even with monetary incentives (Economides & Lianos, 2021). In very specific cases where this has a clear impact on consumer welfare, a remedy could be considered (e.g., in the framework of a competition investigation) to impose a service provision mode that includes the non-transfer of data to receive personalized advertising (CMA, 2020, p. 27).

⁴³³ See article 5.a of the European Commission's DMA proposal. In addition, the proposed DMA seeks to enhance consumer ability to rely less on the same platform ecosystem (e.g., by preventing required identification or registration services, articles 5.e and 5.f; and by allowing software and application changes and ensuring full interoperability of supplementary services, articles 6.b, 6.c, 6.e and 6.f), which may alleviate the dynamics of data concentration, enhancing competition and consumer privacy protection.

⁴³⁴ See article 6.h and 6.i of the European Commission's DMA proposal.

FOURTH: A multidisciplinary and cooperative approach should be adopted by the institutions involved

7.4.a. Strengthen inter-institutional cooperation

The challenges associated with the dynamics of competition in the online advertising sector, as with other digital markets, require attention on several fronts. Competition authorities need to be on the front line to enforce competition law (in case of detecting possible anticompetitive conduct) and to promote competition (to ensure the sector's competitive functioning, e.g., through an optimal regulatory response). But there are also challenges for independent regulators of related sectors (such as telecommunications and audiovisual) and for data protection authorities. Institutional cooperation of all the players involved is desirable.

The CNMC, as competition authority and independent regulator of the telecommunications and audiovisual sectors, combines a convergent and multidisciplinary vision to provide a global response to the challenges posed by online advertising.

7.4.b. Strengthen international cooperation

Institutional cooperation must go beyond the national level. In online advertising, the competitive dynamics and associated challenges are similar in most developed countries.

Without prejudice to further cooperation with third-country authorities, the European Union is the appropriate forum to coordinate a first response to the market challenges of online advertising, especially in the face of some practices reviewed in this study that may occur at a supranational level and can, therefore, be analysed more efficiently and effectively from a supranational perspective. The DMA proposal is welcomed in this regard by suggesting an EU response that avoids inconsistent national approaches resulting in the fragmentation of the Single Market.

The DMA should include mechanisms for enhanced cooperation of the Commission with the independent national authorities of the Member States⁴³⁵. Although a regulatory instrument aimed at strengthening the single market for digital services, the DMA is largely based on competition principles. Therefore, it can be based on the existing cooperation

⁴³⁵ Article 32 of the European Commission's DMA proposal includes the Member States in a purely advisory Committee. See the proposals of the National Competition Authorities of the ECN.

[Joint paper of the heads of the national competition authorities of the European Union. How national competition agencies can strengthen the DMA](#)

schemes between national authorities and the European Commission within the framework of the European Competition Network (ECN).

In fact, this cooperation between national competition authorities, and between them and the European Commission as the EU competition authority, will continue to be necessary within the framework of the ECN. The DMA only affects certain players (gatekeepers at the level of the EU) and conducts related to online advertising but not all. It is key, therefore, that the response of the competition authorities be consistent across the EU, as the competition issues associated with online advertising will be similar in all Member States.

FIFTH. The powers and means of the competition and regulatory authorities should be strengthened

Sectors such as online advertising are relevant in terms of competition for two reasons:

- First, it can be a particularly problematic market due to its specific characteristics, e.g., concentration, vertical integration and data relevance.
- Second, competition in online advertising is relevant throughout the economy, because of its relationship with related and adjacent services and, especially, because of the role of advertising as a driver of competition in all sectors.

Therefore, competition and regulatory authorities must be adequately empowered to respond to the challenges of sectors such as online advertising. The transposition in the EU and in Spain of the so-called ECN+ Directive⁴³⁶ has been configured as an opportunity to establish and consolidate the powers of competition authorities such as the CNMC to prioritize⁴³⁷ their actions. The possibility of not initiating actions in case of complaints that are not considered a priority⁴³⁸ will allow them to focus their efforts on those unlawful conducts that may cause the greatest potential harm to consumers or to the competitiveness of the markets.

⁴³⁶ [Directive \(EU\) 2019/1](#) of the European Parliament and of the Council of December 11, 2018 to empower the competition authorities of the Member States to be more effective enforcers and to ensure the proper functioning of the internal market.

⁴³⁷ See Article 4.5 of the "ECN+ Directive" ([Directive \(EU\) 2019/1](#)).

⁴³⁸ See Article 49.4 of [Law 15/2007, of July 3, 2007, on the Defense of Competition](#), as amended by article 1.9 of Royal Decree-Law 7/2021, of April 27, 2007.

In addition, competition and regulatory authorities need to have the flexibility to adapt their resources to the challenges and complexity of the digital sectors, in particular online advertising. It is important for the authorities to have sufficient autonomy to flexibly organize their means and be able to establish specialized units and resources trained in digital skills.⁴³⁹ In this regard, the existing framework in Spain⁴⁴⁰ is not sufficient to provide the CNMC with full autonomy to manage its human resources, organizational structure and budget. Therefore, it is recommended that national lawmakers adopt the necessary legal reforms to this end.

Greater autonomy would improve the agility of the authorities' investigations, often one of the main criticisms of competition policy in digital markets, which can be too slow and resource-consuming (Geradin, 2020) to issue a ruling that may come too late, when the market has already been tipped in favour of one or a few dominant companies (Bourreau & de Stree, 2019).

That may be a way to overcome the information asymmetry that weighs on authorities in such complex sectors. This will allow for better analytical capability in cases involving a complex task in digital markets, such as market definition, merger and conduct analysis (Bourreau & de Stree, 2019).

Therefore, updating the institutional and regulatory framework of competition policy is a great opportunity to improve the contribution from competition authorities to maximize consumer welfare, including actions, where necessary, in relevant sectors such as online advertising.

⁴³⁹ In line with what is being done by the authorities in the [United Kingdom](#), [France](#), the [United States](#), [Mexico](#) and [Australia](#).

⁴⁴⁰ Taking into account that [Royal Decree-Law 7/2021](#), of April 27 (which contains the amendments derived from transposing Directive (EU) 2019/1) does not change the existing framework in Spain in this regard.

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