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Centre on Regulation in Europe
Improving network and digital industries regulation

Internet Platforms and Non-Discrimination

Project Report

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5 December 2017



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CERRE's added value is based on:

- its original, multidisciplinary and cross-sector approach;
- the widely acknowledged academic credentials and policy experience of its team and associated staff members;
- its scientific independence and impartiality;
- the direct relevance and timeliness of its contributions to the policy and regulatory development process applicable to network industries and the markets for their services.

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The project, within the framework of which this report has been prepared, has received the financial support of a number of CERRE members. As provided for in the association's by-laws, it has, however, been prepared in complete academic independence.

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Executive summary

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

This report evaluates whether **non-discrimination obligations for online platforms**, as suggested, for example, by the French and German authorities, are warranted from an economic and legal point of view. Thereby, the focus of this report is on online platforms that employ a multi-sided business model. Based on several case studies encompassing operating systems, app stores, search engines, e-commerce platforms and ad-blocking, the report identifies **(i) (paid) prominence** of some third parties over others and **(ii) the favouring of a platform’s integrated services** over independent entities as possible concerns across the Internet with respect to discrimination in online platforms. In the extreme, such discrimination may even take the form of blocking of specific third-party products, content or services. Within this scope, both the current **legal framework** that applies to online platforms at the EU level, as well as the insights of the **economic literature** regarding the **welfare effects of discrimination with respect to prominence**, are reviewed in this report.

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

From an economic perspective, the literature finds that **discrimination in the form of paid prominence may often be in the interest of consumers**. In the case where content providers’ quality is pivotal, static efficiency is maximised if the platform can offer content providers paid prominence; in the other case, where content providers differ mainly by price, welfare results may reverse. In both of these cases **smaller or low-quality content providers are worse off if platforms can offer paid prominence**. This gives rise to concerns regarding dynamic efficiency and long-term variety in those markets. Additional welfare losses may arise if platform operators are vertically integrated with content providers. In summary, **from a static efficiency perspective, the economic findings do not support a general theory of harm with respect to the considered discriminatory practices that would warrant a wide ex-ante application of a non-discrimination rule**. From a dynamic perspective, a non-discrimination rule may be more appropriate, but currently there is a lack of economic research to thoroughly support this claim.



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

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

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

Third, to facilitate the enforcement of existing rules, the report discusses the imposition of a **new proportionate obligation of transparency for online platforms**. Only the most important online platforms (e.g., based on revenues or active users) should be subject to such a transparency obligation. **Data collection should be done on a continuous basis** in order to establish an empirical basis for quicker and better assessment and possibly enforcement of competition issues. Moreover, the simple fact that such information is collected and readily available could act as a **“coercive regulatory device”**. This may prevent unjustified discriminatory actions against content providers in the first place and foster effective competition between content providers on the platform in the long run. **Data should be collected by the Commission, which is the competition authority at the EU level**. Specifically, information regarding the basis on which prominence is granted (e.g., in the case of sponsored search: bids submitted by the content providers, the platforms’ quality assessment of the content providers, click-through rates, etc.) could be collected. Finally, the establishment of such a new obligation should **first be tried with self- or co-regulation**. If that proves to be ineffective, however, the obligation could be foreseen more formally in codified law.



1. Introduction

The rapid growth and the economic success of platform business models along the internet value chain shape how internet users today can access digital services and content. Conversely, multi-sided intermediaries now represent main gateways for businesses, services and content providers, as well as for advertisers, to gain access and exposure to consumers. In its Digital Single Market strategy, the European Commission recognised the central role of online platforms in the internet ecosystem and emphasised their importance with regard to the access to information (European Commission, 2016a). In particular, the social benefits of platforms through new products and services, innovative businesses, and enhanced matchmaking are widely acknowledged.

At the same time, there have been concerns about the market position and the economic power that some online platforms have gained in their respective layer of the internet value chain. The European Commission has identified several issues that have been raised by stakeholders with regard to the conduct of some intermediaries such as fair treatment in Business to Business (B2B) relations between online platforms and suppliers. In its Mid-Term Review on the implementation of the Digital Single Market Strategy, the Commission summarised its preliminary assessment of those concerns and stated its objective to “safeguard a fair, predictable, sustainable and ultimately trusted business environment in the online economy” (European Commission, 2017a, p. 8). Recognising platforms as “key gatekeepers of the internet, intermediating access to information, content and online trading” (European Commission, 2017a, p. 7), the Commission’s policy initiative will be guided by four principles aimed at “a level playing field for comparable digital services” and “keeping markets open and non-discriminatory to foster a data-driven economy” (European Commission, 2017b).

The Commission announced that particular scrutiny will be given to platform-to-business trading practices and the concern that some platforms may engage in discriminatory behaviour. In particular, an intermediary may engage in discriminatory behaviour by favouring its own products or services or by discriminating between different third-party suppliers and sellers. Whereas such practices can also be found in traditional media markets, e.g., with respect to advertisements for affiliated content and services, the Commission worries that such discriminatory practices could possibly be harmful to downstream competition if exercised by a platform in a gatekeeper position. Moreover, the “lack of transparency, e.g., in ranking or search results,” has, among others, been identified as a key issue in this context (European Commission, 2017a, p.8). In its assessment, the European Commission emphasised the significance of platforms for small and medium enterprises (SMEs): 82% of SME respondents rely on search engines to promote products and/or services online, while 42% use online marketplaces to sell their products and services (European Commission, 2017a).

More generally, the European Parliament has recently stressed “the need for net neutrality and fair and non-discriminatory access to online platforms as a prerequisite for innovation and a



truly competitive market” in its report on platforms and the digital single market (European Parliament, 2017, Nr.45). By doing so, the goal is to ensure “that platforms that serve as a gateway to a downstream market do not become gatekeepers” (European Parliament, 2017, Nr.70). The European Council also underlines the necessity of increased transparency in platforms’ practices and uses (European Council, 2017, para 11).

Previously, the concept of platform neutrality has been proposed and discussed on a national level by the Conseil National du Numérique (CNNum), an independent advisory commission to the French government (CCNum, 2013). In its report, CCNum suggests several measures aimed at guaranteeing non-discriminatory treatment of services that operate on top of a platform. CCNum is particularly concerned about discrimination in markets where platform providers have entered into services markets that rely on the platform as an input. According to CCNum, the dual role of platforms as partners and competitors thus warrants additional measures to ensure non-discrimination, which may range from transparency obligations to functional separation.

The French telecommunications regulatory agency, Autorité de régulation des communications électroniques et des postes (ARCEP), recently published a report on end-user devices and their influence on internet openness. ARCEP (2017a) argues that beyond access networks, internet openness depends upon a complex technical chain and that today several players along this chain “have the ability to limit actual access to certain online services and applications for both users and companies operating on the internet” (ARCEP, 2017b). ARCEP’s focus is on end-user devices, the respective operating system and particularly the app store, which is deemed “an essential point of access to the Internet” (ARCEP, 2017a, p.6). Users’ right to access content according to ARCEP may be curtailed by the editorial policy of the operating system and/or the app store. More precisely, the pre-installation of key applications on the end-user device and the promotion of content in app stores are viewed as possible measures to distort users’ choice. Whereas discriminatory actions could be technically and objectively justified, e.g., due to security and integrity reasons, OS providers and app store operators may have an incentive to engage in discriminatory behaviour against competing apps of vertically integrated services.

In the context of net neutrality, the idea of non-discriminatory access to a gatekeeper’s resource in the Internet has been at the centre of a worldwide policy debate during the past decade (see Krämer, Wiewiorra & Weinhardt, 2014 and Greenstein, Peitz & Valletti, 2016, for overviews). Here, the focus has been on last-mile access network providers and the various network management practices that they may pursue. “Open internet regulation” in Europe¹ and the US² have introduced non-discrimination obligations for access network providers, which are viewed as central gatekeepers between consumers and content providers at the broadband infrastructure level.

¹ EU rules on net neutrality apply as of 30 April 2016, following the adoption of Regulation (EU) 2015/2120 on 25 November 2015.

² In April 2015 the US Federal Communications Commission (FCC) issued the *Open Internet Order*, which went into effect on June 2015. In May 2017, the FCC announced that it will reconsider those rules and return to the previous regulatory framework.



Proponents of net neutrality have advocated that all data packets should be treated equally regardless of their origin and destination in order to protect fair and sustainable competition on top of the network layer, and especially to allow for the market entry and growth of new and small content and services providers. In reverse, opponents have argued that packet discrimination may stimulate innovation, as it allows the allocation of scarce network capacity more efficiently and better catering to the content and service providers' different technical requirements. Overall, the economic literature has found that net neutrality has ambiguous welfare effects in the short run, and, in the long run, is likely to reduce incentives to invest in network infrastructure (cf. Easley, Hong & Krämer, 2017).

As exemplified by the initiatives in France (CCNum, 2014; ARCEP, 2017a), referred to above, as well as a similar initiative by the Federal Ministry of Economic Affairs in Germany, proposed in their "white book on digital platforms" (BMWi, 2017), the central notion and the core concepts of "net neutrality" may inspire and inform policy initiative at higher layers of the internet value chain beyond the broadband infrastructure level.³ However, there are significant differences between those layers with regard to technical and economic characteristics, which must be taken into account, when analysing the necessity and impact of such policy measures. On the one hand, establishing and sustaining a gatekeeper position is likely to be founded on different factors in infrastructure, device and software markets. On the other hand, technical justifications and positive effects of discriminatory practices vary. Whereas, at the infrastructure level, prioritisation of data packets may alleviate congestion problems and thus increase the overall efficiency of the system, congestion is not a critical issue in software markets. Therefore, the analysis of non-discriminatory access to platforms at higher layers of the internet value chain cannot merely rely on the insights of the net neutrality debate, but must look into the specifics of those markets.

The application of neutrality regulation at the infrastructure layer was based on two main reasons. First, access networks, in particular fixed-line networks, were perceived as market participants with considerable market power and seen as critical intermediaries for users that wanted to access internet services and content. Second, the access to those gatekeeper intermediaries was viewed to be of special societal importance, because it allowed users to exercise their fundamental rights to access and distribute information. Conversely, it enabled businesses to reach consumers and thus access was vital for competition and innovation.

Having laid down open internet regulation and thus opted to guarantee users as well as content and services providers non-discriminatory access to a critical bottleneck resource at the infrastructure layer, the question emerges whether the same rationale should apply to other layers of the internet value chain. For instance, as described above, ARCEP has argued that on top of a neutral infrastructure layer, there have emerged new gatekeepers that could effectively

³ In this report, we will not deal with net neutrality issues on the broadband network layer, but focus on applications of the non-discrimination principle, i.e., the key idea of net neutrality, to other important access points along the internet value chain.



limit access to some online content, for both users and other internet stakeholders (ARCEP, 2017b). In the spirit of net neutrality at the network layer, the application of non-discrimination obligations with regard to access for end users and businesses could be justified if platforms, on the one hand, could be qualified as gatekeepers with significant market power and, on the other hand, access to those platforms would be deemed of such societal importance that the benefits of non-discrimination outweigh concerns regarding the limits imposed on their freedom to conduct business and thus possible impediments to innovation (see Easley et al., 2017).

Access points along the internet value chain may therefore be assessed with respect to those two dimensions: First, how much *market power* does a (potential) gatekeeper have? Second, how *important* is that platform and its services or content for consumers and other stakeholders? If a platform lacks market power, there is arguably no need for a non-discrimination regulation, because competition could provide alternative access gateways. On the other hand, even if a platform constitutes a monopolistic bottleneck, but its services are only of interest to a very small share of users, imposing ex-ante non-discrimination is likely not warranted. Of course, both those criteria for specific services may change over time. Naturally, the assessment of both dimensions poses significant challenges, but should guide application of non-discrimination obligations in order to ensure a consistent regulatory framework with respect to internet openness.

Market power as an abstract concept denotes how freely a firm can act from competitive constraints. Whereas traditionally market power has been measured as a firm's ability to behave independently and profitably raise its price over marginal costs or has been approximated by a firm's market share, those measures are often inappropriate in data and platform markets (Easley et al., 2017). Due to network and feedback effects, many firms in the digital economy may enjoy very large market shares, but in turn this does not necessarily mean that they enjoy market power.⁴

In particular, services that are offered at a price of zero to consumers are likely to gain a large market share, but its demand may be very elastic such that, once it decides to demand a price, many consumers are likely to switch to a competing service. On the contrary, network effects may also strengthen market power of incumbents and raise market entry barriers, especially if switching costs for market participants are high. This may allow them to charge high prices, either on the consumer side, or on the other market side. Moreover, firms may exploit additional dimensions next to the price, such as the amount of collected data, to exploit market power.

⁴ The General Court of the European Commission has recognised this issue in its decision on Microsoft's acquisition of Skype in the case *Cisco Systems Inc. and Messagenet SpA v Commission* (T-79/12): "[...] the consumer communications sector is a recent and fast-growing sector which is characterised by short innovation cycles in which large market shares may turn out to be ephemeral. In such a dynamic context, high market shares are not necessarily indicative of market power [...]" (para 69).



Thus, measuring market power in data-driven and multi-sided markets is a challenging issue on its own and currently the subject of many research efforts. Although, we will touch on this issue on several occasions, a detailed investigation of this concept and its application is beyond the scope of this report. Instead, we refer to the recent CERRE report on *Big Data and Competition Policy* by Bourreau, de Streel & Graef (2017), who undertake an in-depth assessment of market power in the context of data-driven markets.

Opposed to the concept of market power, which is clearly understood and well-defined in economic and legal terms based on a long history of the term, there is no well-developed definition for the notion of societal importance of a platform or the access to a specific intermediary. Instead, the decision on whether a particular access gateway is deemed to be of societal importance will involve a broad range of criteria that are likely to include factors beyond economic considerations.

The access to some platforms, similar to the access to communications networks, is today often seen as critical for people's fundamental rights to free speech, access to information and to participate in public life (see, e.g., Leerssen, 2015). As highlighted before, the total number of users and the relative share of citizens that use a specific platform is likely a relevant indicator of their importance. In a survey among German, French, Spanish and Polish citizens, Oxera (2015, p.24) finds that "nearly all Internet users across countries (96-97% of respondents) use information platforms such as Bing, Wikipedia and Google". Moreover, "a significant majority (77% in France and 82% in Spain and Poland) also use communications platforms such as Facebook, Snapchat and Twitter".

Next to users, the assessment of a platform's importance will also include businesses' valuation for that intermediary. According to Oxera (2015, p.6f) "professional networks such as LinkedIn are now standard tools in the recruitment profession", crowdfunding platforms are particularly beneficial to high-risk and small market entrants, and e-commerce platforms (including online markets and app stores) have significantly extended businesses' market reach, even beyond traditional geographic barriers. It is further highlighted that especially "niche products might not exist without the ability to market through online platforms" (p.7). With regard to the total economic value of platforms, Copenhagen Economics (2015) estimates that the total value of goods and services purchased through online intermediaries was about €260 billion in 2014, which corresponds to 2.5% of total final consumption in the EU28. Furthermore, the study emphasises that platforms are particularly valuable to SMEs, as they benefit from lower costs of selling, reaching more customers and from easier ways to build trust with consumers.

Next to the stakeholder's direct value created by platforms, the economic benefits of the Internet's major platforms go beyond their respective markets. In a study for the German Federal Ministry for Economic Affairs and Energy, WIK (2016) shows that, in many cases, platforms represent enablers for other industries, and thus their economic impact multiplies with their significant spillover-effects into those industries. The authors identify such spill-overs with respect to technological, economic and societal effects. Furthermore, Stylianou (2016)



argues that in complex internet ecosystems “systemic efficiencies” can arise due to the interaction of multiple distributed components and thus coordination and control of such systems may outweigh concerns about market power in a single market. In turn, the scale and the degree of vertical integration of a platform operator beyond a specific single market or layer of the value chain may be considered as further criteria with respect to their importance.

The answer to whether a non-discrimination rule is warranted with regard to a particular platform will crucially depend on the question of who should be protected by such rules. Already the quest to identify gatekeepers along the value chain may depend on the decision on which stakeholders should be included within the analysis. For instance, in e-commerce, consumers find it relatively easy to access a particular seller. Next to a large platform such as Amazon, a consumer may directly access the seller’s own web-shop or find resellers through a product search engine or product comparison site. However, if a new and likely small seller wants to gain access to a large group of customers, access to a leading platform such as Amazon is likely to be vital to gain a footing in the market. This is especially the case if sellers are likely to multi-home, i.e., they can be accessed on different platforms, and at the same time buyers single-home, i.e., they only visit a specific intermediary and thus they can only be accessed through that platform.

In the terminology of Armstrong (2006), platforms may then become *competitive bottlenecks*. From a seller’s perspective, it may not even make a difference whether consumers, in general have the choice between competing platforms, if consumers empirically prefer a specific outlet and thus can only be accessed effectively through that platform. The degree of multi-homing on the consumer and the seller side in the e-commerce sector is likely to vary for different product categories. Whereas for some products a significant share of consumers is likely to multi-home and to incorporate information from multiple websites (as found by Oxera, 2015 and Google, 2011), there also seems to be a considerable share of users who single-home for a range of other product purchases, as, e.g., indicated by the success of *Amazon Prime* (Consumer Intelligence Research Partners, 2017) and the company’s increasing market share in the European online retail market (Fung Global Retail & Technology, 2016).

1.1. Definition of online platforms

In this report, we focus on platforms that constitute a *two-sided or multi-sided market*. The multi-sided business model is typical for many of the intermediaries in the Internet that now represent important access points between consumers and third-party sellers, services and content providers.⁵ According to Hagiu & Wright (2015), a multi-sided platform enables two or more sides to *directly interact*, meaning that those sides “retain control over the key terms of

⁵ In the following, we will use the term *content providers*, when we refer to the firms on the side of the platform opposite to users, irrespective of their special occupation. As highlighted in the case studies, those firms may be sellers, app developers, website administrators, service providers or content providers depending on the specific platform considered.



the interaction” (p. 163). Moreover, each side must be *affiliated* with the platform in the sense that they undertake platform-specific investments necessary to participate in transactions with other sides.⁶ In turn, this regularly gives rise to *cross-sided* or *indirect network effects*: the value of the platform to one side increases as the number of affiliates on the other side is growing (Rochet & Tirole, 2006, Armstrong 2006).

This definition allows us to distinguish platforms from resellers and fully vertically integrated firms, which have sometimes also been classified as platforms (see Gawer and Cusumano, 2008). Moreover, we do not necessarily require cross-sided network effects to be reciprocal. For instance, in the case of advertising, users may not care about the number of advertisers on the other side, although advertisers clearly value the number of users (see Hagiu & Wright, 2015). Although this definition provides a clear identification of platforms in an economic sense, it should be noted that the identification of platforms in legal practice may require further considerations and that, at this stage, there is no definition of an online platform in EU law.

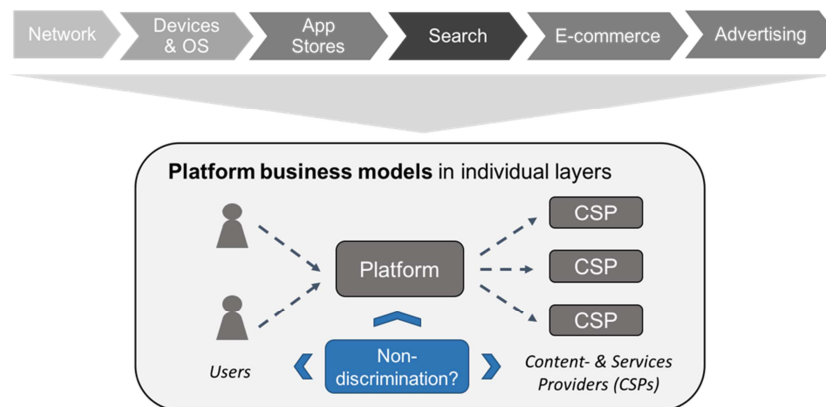
1.2. Case studies

Whereas we have laid out the general context of this study and the abstract concept of non-discrimination above, we now provide an overview of several specific issues that have occurred at different layers of the internet value chain and which may be viewed as discriminatory conducts of possible gatekeepers (see Figure 1 for an overview). The goal of this overview is not to provide a judgement regarding the particular conducts surveyed below, but to substantiate possible non-discrimination issues in a platform context and identify general themes that can inform a systematic analysis of this topic.

As indicated by the European Commission’s survey on its proposed platform definition (see Gawer, 2016), the broad and diverse nature of the entities that constitute the Internet make it difficult to develop an all-encompassing concept or framework in a top-down manner. Thus, a bottom-up approach that builds upon a collection of specific case studies can provide insights to the question of what are the critical issues with respect to non-discrimination and where do such issues arise.

⁶ According to Hagiu & Wright (2015, p.163) such platform-specific investments could be “a fixed access fee (e.g., buying a videogame console) expenditure of resources (e.g., spending time and money on learning how to develop applications using the iPhone’s APIs), or an opportunity cost (e.g., driving to a shopping mall, joining a loyalty program).”

Figure 1: Platform business models along the internet value chain.



1.2.1. End user devices and operating system

On top of the broadband network, end user devices are commonly identified as gateways for users to access internet services and content. As noted by ARCEP (2017a), this notion not only includes the hardware link, i.e., the actual device and its technical functions, but also the software link, i.e., the operating system. The operating system, on the one hand, determines the (limits on) users' ability to install, remove and use applications (apps). On the other hand, through the exposure of application programming interfaces (APIs), the operating system determines which functions, at the software and hardware level, can be accessed by third-party device manufacturers and third-party app developers.

By choosing its level of vertical integration, the operating system provider determines the number of sides that may access its system (Rysman, 2009). For example, Apple, taking a vertically integrated approach in the smartphone market, exclusively relies on its own hardware, and thus its operating system *iOS* can be considered a two-sided platform between users and app developers. In contrast, Google's *Android* can be installed on many devices produced by third-party manufacturers. Therefore, *Android* constitutes a three-sided market between users, app developers and device manufacturers (cf. Rysman, 2009).

Similar to the openness or compatibility of operating systems with respect to the hardware, there is also no clear-cut boundary of an operating system with respect to other software components. In many cases, the operating system provider determines which software functions lie inside the boundary of its operating system, and thus cannot be accessed externally, and conversely, which functions are complementary, and thus are possibly open to third-party developers.

In this context, some developers have complained that they cannot obtain access to operating system functionalities, which they deem necessary to compete with integrated services of the operating system provider. For instance, Apple introduced the fingerprint recognition feature

Touch ID for its services in 2013, but made it available to third-party applications only a year later (AppleInsider, 2014). Similarly, access to the near-field communication (NFC) chip, which is a prerequisite for mobile payment systems, has so far only been granted to *Apple Pay*, but not to competing payment systems (Engadget, 2017). Apple has justified such limitations on security grounds.

Even if developers are able to offer substitutes, they sometimes feel disadvantaged with respect to the placement and the visibility of their apps to users. For instance, apps of the operating systems provider may come pre-installed with the operating system, an issue which has been at the core of the Microsoft case (European Commission, 2004), or they are displayed more prominently to the user.

In other cases, a user may be able to access integrated services of the operating system more comfortably than third-party apps. Currently, this is the case for personal voice assistants on smartphones. Whereas *Siri* can be accessed on Apple's *iPhone* with a single click, and *Google Assistant* can be accessed on devices that rely on Google's *Android* even without touching, third-party apps such as Amazon's *Alexa* need to be started as a regular app, requiring at least two taps (WIRED, 2017). Of course, *Alexa* can be accessed directly on Amazon devices, which run an operating system based on the Android Open Source Project. Whereas the *Amazon Fire* tablets established market share of 6.4 % in the global tablet market (Statista, 2017a), the *Fire Phone* failed to attract a significant user base in the smartphone market (GeekWire, 2015).

In summary, the majority of concerns regarding discriminatory practices in operating system markets have been raised about uneven conditions for integrated and third-party apps. In consequence, vertically integrated operating systems operators may gain an advantage in markets that rely on apps' access to a device's functionalities and the access to users. In particular, the competition for newly emerging markets may be affected by the diversion of users' attention and the prominence of integrated apps.

1.2.2. App stores

In the context of mobile operating systems for smartphone handsets and tablets, app stores have frequently been viewed as important gatekeepers between users and application developers. In 2016, US consumers on average spent almost three hours each day using their mobile device (twice as much as in 2013) and about 60% of their digital media time using mobile apps (16% more than in 2013) according to comScore (2017). At the same time, Apple's app store is estimated to have generated US\$8.5 billion in annual revenue for Apple in 2016 (Bloomberg, 2017). As content has become accessible predominantly in the form of applications on these devices, ARCEP (2017a) considers app stores as an essential point of access to the Internet for users and identifies the editorial policy of the app store operator as a potential limit on end users' ability to access such content.



In some cases, third-party apps have been blocked from being listed in the app store at all. This may be due to the app store's decision to not allow any apps of a specific category, such as adult content in the case of Apple's *iOS* (Apple, 2016). Moreover, in 2014 Google changed its *Play Store* agreement to prohibit any app whose purpose is to distribute other apps in its *Google Play Store* (Android Authority 2014; Google 2017). This move forced Amazon to remove its alternative Android *Appstore* from the *Google Play Store* (TechCrunch, 2014). In contrast to *iOS*, which does not allow the installation of apps distributed outside of its app store, Amazon's app is however still available for Google's *Android* as a stand-alone download.

More often, complaints from third-party app developers do not concern outright blocking from an app store, but refer to specific conditions that are prescribed by an app store operator. In the case of the popular audio streaming app *Spotify*, this led to the rejection of an updated version of the app by Apple. At the core of the dispute was Apple's requirement that third-party apps distributed over its app store were only allowed to use Apple's own payment system, for which it charges 30% of any transaction. Moreover, Apple prohibits developers "from redirecting customers inside of an app to purchase digital content or subscriptions outside of the app to avoid paying Apple's standard commission" (Gutierrez, 2016). Spotify has viewed this condition as an unfair advantage for Apple's own music streaming service *Apple Music*, which charges the same subscription fee as Spotify for its advertising-free premium service. This particular dispute highlights the two dimensions of non-discrimination. Whereas Spotify criticised the favouring of Apple's integrated service as a discriminatory and anticompetitive conduct (Recode 2016), Apple accused Spotify of demanding privileged access to the app store and thus discrimination relative to all other third-party apps available in the app store (Gutierrez, 2016).

Next to being available in an app store, users' access to an app is largely influenced by its general visibility in the app store and its ranking in the result lists displayed in response to a users' search queries. As of March 2017, about 2.2 million and 2.8 million apps were available in Apple's *App Store* and Google's *Play Store*, respectively (Statista, 2017b). Therefore, gaining prominence in the app store is of critical business importance for app developers. In 2015, Google introduced sponsored ads in its *Google Play Store*, which enables developers to promote their apps by bidding for specific key words that match a user's query (Search Engine Land, 2015). The winner of the key word auction is then shown prominently in a prioritised slot on top of the organic search results. In 2016, Apple followed suit and introduced *App Store Search Ads* in the US (The Verge, 2016). In consequence, users can find apps either in the organic search results list, for which they can modify the ranking criteria to some extent, or they rely on the sponsored app result.

Stakeholders have questioned whether sponsored ads, which can be viewed as a form of paid prioritisation, may be used to promote inferior content as it possibly enables app developers to bypass competition for quality in the organic search results section. In particular, start-ups and small apps may not have the financing power to gain access to the most prominent spots. On the other hand, it is argued that sponsored ads could support such new ventures by gaining

visibility that they could otherwise not achieve against established market participants in organic search (see, e.g., Business Insider, 2016). In general, the economic literature has identified pro-competitive and anti-competitive effects of advertising (see Bagwell, 2007).

1.2.3. Search engines

In this vein, the debate on app store rankings and sponsored ads resembles the arguments made in the context of general web search. In fact, for *Google Search* and most other search providers, sponsored search and the auctions for prominent display slots represent their main financing. Since search engines are now often deemed “indispensable for finding relevant content and products from the massive array of options available on the web” (Burguet, Caminal & Ellman, 2015, p. 44), the ranking and display of search results are considered important determinants of content providers’ ability to reach internet users. Next to the concern that sponsored search results may negatively impact competition between different third-party content providers by affecting organic search performance (see, e.g., Search Engine Land, 2017 and WordStream, 2017) and thus the choice of users, the (prominent) display of the search engine provider’s integrated content has provoked a range of complaints by third parties.

Following a seven-year investigation, the European Commission decided that Google had abused its dominant position as a search engine by favouring its comparison shopping service *Google Shopping* and discriminating against competing independent shopping comparison services (European Commission, 2017c). The Commission found that Google gave “prominent placement to its own comparison shopping service” and “demoted rival comparison shopping services in its search results” (European Commission, 2017c, p.1). In its decision, the European Commission (2017c, p.4) demanded that Google must take action to “respect the simple principle of equal treatment” with regard to its comparison shopping service, thus, implying that, in this context, Google must treat content and services on top of its web search in a non-discriminatory manner.

In a similar case, the UK mapping company *Streetmap* accused Google of abusing a dominant position by promoting its mapping service and thus engaging in discriminatory conduct against mapping services of third-party providers (TechCrunch, 2016). However, the UK High Court of Justice ruled that the promotion of Google’s own service was objectively justified, because the inclusion of the mapping service had increased the quality of the general search and the same benefit could not have been achieved by an alternative proportionate means (High Court of Justice, 2016). The court summarised a dilemma inherent to many of the surveyed practices by highlighting that the “unusual and challenging feature of this case is that conduct which was pro-competitive in the market in which the undertaking is dominant is alleged to be abusive on the grounds of an alleged anti-competitive effect in a distinct market in which it is not dominant” (High Court of Justice, 2016, para 84).

With respect to Google’s *Flight Search* service, Edelman & Lai (2016) find that the prominent placement of its flight search results on top of its organic search results increased the “volume of paid clicks by approximately 65% and decreased the volume of organic clicks by

approximately 55%” (p. 882). With respect to search results and prominence that require payments from third parties as well as the display of integrated services, transparent delineation between sponsored or favoured content and organic content is a frequently discussed topic.

There is consensus that transparency is a vital condition to offer users an unbiased choice. In this vein, the US Federal Trade Commission [FTC] (2013) advises search engine providers to prominently distinguish advertising from natural search results such that users can understand the role payment plays in its results (Search Engine Land, 2013). However, based on their empirical findings for Google’s *Flight Service*, Edelman & Lai (2016) find that labelling integrated services as such does not significantly alter users’ click behaviour and therefore conclude that such transparency measures are unlikely to be effective in leading searchers to organic search results instead of paid listings. Whereas consumers may be indifferent between clicking on organic and sponsored links, this decision obviously impacts the costs of the listed companies to gain access to consumers.

The previously described issues in the context of sponsored search are likely to be augmented if the list of search results that presented to the user becomes smaller and if users rely on search engines in situations when they are more impatient to obtain a result or recommendation. This is already the case for mobile search services, that are used on the go and where smaller handsets restrict the physical display size compared to desktop computers, but is particularly pronounced in the case of personal voice-based assistants as introduced above. Interacting with personal assistants, users are likely to rely on a single result in response to a voice search query instead of a list with multiple entries to choose from.

The European Commission (2017c) estimates that if the first search result on *Google Search* is moved to the third rank, this leads to a reduction of the number of clicks by about 50%. This highlights the significant economic effects that stem from a ranking at the top of the displayed search results. Moreover, the Commission finds that the ten highest-ranking organic search results “receive approximately 95% of all clicks on [organic] search results” (European Commission, 2017c). Furthermore, with voice based services, it becomes much more challenging to delineate sponsored and organic content. As display screens of connected devices will disappear in the internet of things, classic visual tools to improve transparency are likely to be unavailable.

1.2.4. Ad-blocking

A different type of gatekeeper between internet users and content providers has recently emerged in the form of ad-blockers. In contrast to the characteristics described for other layers of the internet value chain, the non-discriminatory default option of such browser tools or standalone apps is to block any content identified as display advertising. As the vast majority of internet content providers rely on advertisement-based financing (see, e.g., Evans 2009) users’ adoption of ad-blocking technology is estimated to have a severe economic impact: for example, it is estimated that Google alone lost out on US\$6.6 billion global revenue in 2014 (representing

10% of its total revenue in that year) due to ad-blockers (Pagefair, 2015). Because ad-blocking is becoming more widely available, e.g., ad-blocking apps and plugins can now be used on mobile devices that run *iOS*, its adoption among users continues to grow (The New York Times, 2017).

Whereas blocking as an issue in itself has raised scrutiny with respect to advertisers' ability to access users (The Guardian, 2015), discriminatory practices of ad-blockers by the means of *whitelisting* present a distinct additional concern with respect to competition between content providers. For instance, Eyeo, the provider of the popular ad-blocking plug-in *Adblock Plus*, which is available for free to any internet user, offers advertisers the opportunity to exempt themselves from its filter lists, but demands a share of the revenues from whitelisted advertising in return. Although Eyeo presents smaller CPs with the option to be whitelisted for free if they agree to place "acceptable ads", competition between larger advertisers may still be affected by whitelisting and discriminatory exemption from blocking.

Moreover, ad-blockers may not always be provided by an independent party. In fact, some telecommunications operators have already tried to introduce their own network-based ad-blocking technology (The Guardian, 2017) and Google has recently announced its own ad-blocker with its web browser *Chrome* (The Verge, 2017). Thus, ad-blockers could possibly be employed to discriminate between integrated and third-party content. This may be especially relevant if those firms hold significant power over other access points within the internet value chain or if advertising-financed firms compete against each other.

1.2.5. E-commerce

With respect to internet platforms in general, the European Commission concluded a fact-finding exercise on platform-to-business trading practices by highlighting that among stakeholders there is "widespread concern that some platforms may favour their own products or services, otherwise discriminate between different suppliers and sellers and restrict access to, and the use of, personal and non-personal data, including that which is directly generated by a company's activities on the platforms" (European Commission, 2017a, p.8). In particular, the dual role of some platforms as an access provider and a competitor was often seen as problematic.

Moreover, businesses felt that, on some platforms, the delisting of a product or service or the suspension of an account may come without due notice or without any effective possibility to contest the platform's decision. Such practices may be particularly harmful to SMEs, as larger firms can rely on a greater bargaining power *vis-à-vis* the platform to resolve such issues and also have more internal resources at hand to cope with such issues. Similar considerations apply to concerns regarding a unilateral change of a platform's terms and conditions and inefficient redress mechanisms, which the Commission highlighted in its report on an engagement workshop on B2B relationships in the online platform environment (European Commission, 2017d).



In its mid-term review of the digital single market strategy, the Commission suggested that additional dispute resolution mechanisms and transparency measures could be conducive to establish “a fair and innovation-friendly platform economy” (European Commission, 2107a, p.8). In France, CCNum suggested that commercial law may be utilised as a complementary instrument to competition law in order to address issues regarding B2B trading practices in the platform context.

In light of the findings and the B2B environment, such legislative measures would likely not only apply to platforms that supply digital services and content, but also to platforms that facilitate the trading of physical goods. In fact, e-commerce platforms such as Amazon and eBay, similar to the previously discussed app stores, serve as matchmakers between consumers and businesses that compete for the completion of transactions with consumers, and thus constitute large market places in the digital realm. The prominence given to sellers on the platform’s website or app, as well as the displayed ranking order in response to users’ search query, are significant determinants of a sellers’ success, in particular when the same or similar product is offered by multiple businesses. Like the *Google Play Store* and the *Apple App Store*, both Amazon and eBay offer sellers the opportunity to place sponsored search ads. Moreover, if there are multiple sellers for the same product, Amazon recommends one of those sellers as the default to users in the so-called *Buy Box* (Amazon, 2017a). Amazon states that as a seller there is “no additional fee for being Buy Box eligible”, but as part of its performance-based requirements, the platform indicates that it prioritises sellers that have purchased the company’s delivery and fulfilment service *Fulfillment by Amazon*, although it does not “disclose specific targets for becoming Buy Box eligible” (Amazon 2017b).

Besides e-commerce market places, booking platforms and online travel agencies represent important B2B platforms that facilitate the matching between consumers and businesses. In the US, 80% of online bookings in 2013 were made through online travel agencies, and the four biggest intermediaries accounted for 95% of those bookings (Ursu, 2017). Whereas general web search engines mostly finance themselves through advertisements, price comparison sites facilitate users’ search for a specific product or transaction and usually receive a commission from businesses for directing the user to their offer or for the completion of a transaction. As shown by Ursu (2016), based on a large data set of over 160,000 search queries on the popular travel agency site Expedia, the rankings of offers on such a platform has a significant causal effect on consumers’ click-through rates. This result holds even if one controls for possible endogeneity effects, i.e., offers that are shown at higher rankings may offer a better quality to the searching user (which is indeed the case in the mentioned study). More precisely, Ursu estimates the economic value that can be attributed to being ranked one position higher, everything else equal, as US\$ 1.92 for a specific search on Expedia. In line with related empirical evidence (see, e.g., Koulayev, 2014), these estimates highlight the significant effect of rankings on economic efficiency and stakeholder’s surplus in those markets.

For the hotel reservation website *Booking.com*, the German competition authority found that commission rates for hotels vary with the ranking position (Bundeskartellamt, 2015). Among other factors, the ranking position could raise standard commission rates varying between 10-15% up to 30-50%. These numbers further confirm the economic value that firms attribute to being shown prominently to users. They are also indicative that rates on these intermediaries often vary for different businesses. To assess whether such discriminatory pricing is objectively justified is inherently difficult without the knowledge of the employed ranking criteria. But even if the actual algorithms were public knowledge, resulting prices and ranking decisions may still be difficult to evaluate, if machine learning techniques and probabilistic decision-making are employed, such that results cannot be explained by simple deterministic patterns anymore. As artificial intelligence is increasingly utilised, e.g., in search algorithms, these techniques are becoming more widespread in the internet ecosystem (WIRED, 2016).

1.2.6. Common themes

The above list of surveyed case studies is naturally incomplete, but still allows us to identify some common themes that emerge across different layers of the value chain. As platforms regularly act as intermediaries, matchmakers or gateways, the design decisions of a platform have a significant impact on stakeholders of both sides and in particular on the transactions between them. Thereby, a particularly important decision is how platforms present third-party sellers, services or content to users. Giving *prominence* or *priority* to some of those parties in one way or the other is likely to increase their visibility and accessibility to users and thus to ultimately boost their success. Conversely, parties that are less visible, ranked lower or even blocked often conceive this as a critical impediment to successfully competing with rivals that can more easily be accessed by consumers.

In general, platform operators argue that they have an inherent incentive to prioritise entities that are most valuable to the other side of the market, in order to make their platform attractive and to maximise turnover. Thus, similar to exemptions from net neutrality at the network layer, where reasonable traffic management is allowed, there are likely to be discriminatory practices, such as the blocking of spam and malware, that are objectively justified because they benefit all stakeholders. In this context, other stakeholders have called for more transparency with respect to the criteria that underlie platforms' editorial and ranking decision. On the contrary, platforms argue that the technical complexity of the employed ranking algorithms makes disclosure difficult and, that especially for search engines, those algorithms represent the core asset and thus need to be kept confidential. Moreover, making the evaluation criteria fully transparent would open the door to manipulation efforts, which ultimately would render it impossible to establish a quality-based ranking.

In addition to the display of content based on objective (quality) criteria and organic search rankings, many platform operators have introduced the possibility to obtain prominence or priority in exchange for a monetary return. Such promotions and sponsored search



advertisements are frequently implemented via an auction mechanism that displays the highest bidder in a prominent spot on top of or next to the organic results. Opponents have argued that such paid prioritisation schemes would favour large and established companies with superior access to financial resources over new market entrants and SMEs. On the contrary, proponents suggest that newcomers could benefit from such an instrument to attain visibility more quickly.

Across different layers of the value chain, platforms are often not only active as an intermediary, but also offer additional services and content. Most notably, the platform operator may participate on the supply side of the platform, thus competing with independent third parties for the access to consumers. In consequence, those parties are often concerned about the platforms' incentive to favour its vertically integrated supplier and worry about the distortion of a level playing field. Those worries are augmented in cases where platform operators successively enter into adjacent markets on top of the platform and stakeholders fear that previously open platforms will become closed and proprietary ecosystems.

Sometimes platforms provide integrated auxiliary services that are complementary to the services offered on top of the platform. In those cases, complaints have emerged that platform operators restrict the choice of third parties when selecting such complementary services. Moreover, independent third parties sometimes worry that platforms may favour offers that use the platform's integrated auxiliary services even in cases where they do not outright demand their use. Platform operators frequently point to the benefits of integrated services for consumers, especially in the form of compatibility and low transaction costs, but also for the third parties themselves. The issue is further complicated in scenarios where the platform may be used for free for some type of transactions, but is then monetised by the means of a usage fee or a revenue share for other types of transactions that require the use of those integrated auxiliary services.

It is important to delineate those issues which stem from a platform's discrimination between either (i) different third-party sellers, content or services providers, that are all active on the same side of the platform or (ii) the platform's integrated subsidiary and an independent third party that relies on access to the platform, from a wider range of concerns regarding the market power of platforms or their role as intermediaries. For instance, in Europe, there is an ongoing debate about operator's liability for the transactions conducted on its platform. This includes the question whether and when platforms that enable the so-called *sharing economy* should be liable for low-quality or failed transactions, as well as platform's responsibility to combat illegal content such as copyright infringing offers or hate speech. In this report, we will focus on (non-)discrimination and do not discuss those other issues. Therefore, we also do not attempt to provide an all-encompassing analysis of platforms, but rather wish to shed light on that specific issue, which however appears to be of particular relevance in many platform markets along the internet value chain.



1.3. Scope of this report

In this report, we focus on multi-sided platforms according to the definition given in Section 1.1. Based on the central notion that platforms intermediate transactions between consumers on one side and businesses, developers, content or services providers on the other side, we examine the concept of *non-discrimination* with respect to an intermediaries' practices and how those affect the different sides of the platform and the transactions between them. Therefore, we assess non-discrimination in the context of *vertical* relationships, but do not consider the application of non-discrimination to horizontal relationships. For the latter issue, we refer to the public and academic debate on interoperability and its various applications. For example, in telecommunications markets, interconnection between networks has a long history, but interoperability is also discussed in the context of higher layers of the internet value chain (see, e.g., Bernstein et al., 2009, on cloud computing interoperability).

With regard to (possible) discriminatory practices, we will focus on the issues that have also been at the heart of the net neutrality debate. As indicated by the presented case studies, (i) (paid) prioritisation of some third parties over others and (ii) the favouring of a platform's integrated services over independent entities represent major concerns across the Internet with respect to discrimination. In the extreme, such discrimination may even take the form of blocking of specific third-party products, content or services.

We draw on economic literature to identify the impact of potential non-discrimination obligations that would be aimed at prohibiting such discriminatory practices. Our goal is to provide an overview of the likely effects of such policy interventions on the involved stakeholders and overall welfare. On the one hand, this includes the impact on prices and quality, which ultimately determine consumer surplus. On the other hand, this involves an analysis of producer surplus, i.e., firms' profits, and in this case also the distribution of surplus between the platform and the various third-party firms that operate on the platform. Moreover, we will discuss economic efficiency from a static and a dynamic viewpoint. Whereas the former is concerned with maximising consumer or total surplus at a given point in time, the latter considers long-term market dynamics and thus the impact on investments and the variety of offerings available. It is widely recognised that innovation and technological progress have been the main drivers of the Internet's success and thus dynamic effects should play an important role in any assessment of potential policy interventions (see, e.g., Bhargava, Evans & Mani, 2016).

By considering both efficiency goals, we wish to shed light on the trade-offs that may stem from a non-discrimination rule. Moreover, this allows us to assess and discuss the different concerns that have been raised with respect to discriminatory practices. In addition, we give an overview of the existing legal framework by mapping the non-discrimination rules that are already applicable to platforms and examine whether there is a role for ex-ante or ex-post enforcement of non-discrimination. Thus, the report highlights what are the existing obligations for digital



services which relate to non-discrimination, in particular under competition law, consumer protection or specific platform regulation.

Taking into account the economic and legal insights, the goal of this report is to provide a recommendation on whether non-discrimination rules for internet platforms do have virtue and what consequences to expect from their application. Moreover, the report makes suggestions as to when non-discrimination rules should be implemented and offers a comparison of the benefits and drawbacks of the different available legal approaches.

2. Existing legal framework on non-discrimination and Internet platforms

In the context of the debate on the possible need to regulate internet platforms, issues relating to discrimination and transparency have been raised, in particular with regard to B2B relationships (as explained in Section 1). This section reviews the main rules applicable to discriminatory practices that may be exercised by internet platforms in B2B as well as B2C relationships. First, it sets the scene with a typology of non-discrimination rules (and their associated transparency obligations). Second, it reviews general rules applicable to all digital and non-digital platforms, then the semi-horizontal rules applicable to digital platforms and finally the sector-specific rules applicable to some types of digital platforms.

2.1. Non-discrimination obligations and typology of rules

2.1.1. Prohibition of discrimination and obligation of transparency

In law, discrimination consists in (i) applying different conditions to similar transactions or (ii) applying similar conditions to different transactions. Thus, discrimination requires an analysis of the differentiation of supply conditions and the differentiation of the types of customers and transactions. It is only the combination of both that may lead to discrimination which is prohibited.

Discrimination is prohibited under EU and/or national laws for a variety of reasons:

- To protect *effective competition* in order to maximise consumer welfare, as well to ensure fair business practices. According to this goal, discrimination which has anti-competitive effects is prohibited. In this context, it is important to distinguish between *external discrimination* when a firm treats equivalent third-parties differently and *internal discrimination* when a firm, which is vertically integrated, treats its own subsidiary or branch differently from competitors on the downstream or the upstream market;⁷
- To protect the *internal market*, which is a specific but important objective of EU law. According to this goal, discrimination on the basis of the nationality or the residence of the customer is prohibited within the EU;
- To protect *human rights*. According to this goal, discrimination on the basis of several non-economic characteristics such as sex, race, colour, ethnic or social origin, genetic features, language, religion or belief, political or any other opinion, membership of a national minority, property, birth, disability, age or sexual orientation is prohibited.

⁷ Ibanez Colomo (2014 :146) defines internal discrimination as « any strategy implemented by an integrated firm that has the effect of raising the costs of rivals competing against an affiliated division on a neighbouring market.»

In each of those cases, it is possible to justify a discrimination, which is in principle prohibited, if it serves a legitimate goal, is based on objective and legitimate criteria and is proportionate. The acceptable justification depends on the type of discrimination and the goal pursued by its prohibition, but in each case, a proportionality test has to be passed.

EU and/or national laws also impose, in many instances, transparency obligations. Those obligations can have many objectives, such as reducing information asymmetries and making the markets work better. In particular, transparency is the cornerstone of EU consumer protection rules. In the specific context of the prohibition of unjustified discrimination, transparency obligation may facilitate the identification of a discrimination breach, thereby making the legal prohibition more effective.

2.1.2. Typology of rules

(a) General vs sector-specific rules.

Rules can be categorised according to their scope of application:

- *General – or horizontal - rules* apply to all types of goods or services in the economy, being digital or brick-and-mortar. However, their application may require some conditions to be met such as the presence of market power for competition law or a B2C relationship for consumer protection rules;
- *Semi-horizontal rules* apply to a broad category of services, such as all digital services but not the brick-and-mortar services;
- *Sector-specific rules* apply to certain types of services defined in the legal instruments, such as electronic communications services or audiovisual media services.

Because of their broad scope of application, the general rules are often principle-based. Hence, they have the advantage of flexibility and can adapt to rapid and/or predictable technology and market evolutions, but their application to novel issues of discrimination may be unclear which, in turn, can raise the costs of regulation and undermine the effectiveness of enforcement. Conversely, sector-specific rules are in general more detailed, which increases their legal certainty but decrease their flexibility.

The adoption of semi-horizontal or sector-specific rules requires the definition of the types of services on which they will apply. In the context of the Digital Market Strategy, there is a discussion as to whether the EU should adopt (semi-horizontal) rules on online platforms.

At this stage, there is no definition of online platforms in EU hard-law. The only general definition can be found in the Communication of the Commission (2016) on Online Platforms which states “*that online platforms cover a wide-ranging set of activities including online advertising platforms, marketplaces, search engines, social media and creative content outlets, application distribution platforms, communications services, payment systems, and platforms for the collaborative economy.*”

The Commission then lists the characteristics of online platforms:

- (i) *they have the ability to create and shape new markets, to challenge traditional ones, and to organise new forms of participation or conducting business based on collecting, processing, and editing large amounts of data;*
- (ii) *they operate in multisided markets but with varying degrees of control over direct interactions between groups of users;*
- (iii) *they benefit from ‘network effects’, where, broadly speaking, the value of the service increases with the number of users;*
- (iv) *they often rely on information and communications technologies to reach their users, instantly and effortlessly;*
- (v) *they play a key role in digital value creation, notably by capturing significant value (including through data accumulation), facilitating new business ventures, and creating new strategic dependencies.”*

However, there are already some semi-horizontal rules applicable to online platforms. The e-commerce rules apply to the *information society service*, defined as “any service normally provided for remuneration, at a distance, by electronic means and at the individual request of a recipient of services”.⁸

Moreover, in 2015, the Commission proposed a directive applicable to *digital content* defined as “(a) data which is produced and supplied in digital form, for example video, audio, applications, digital games and any other software, (b) a service allowing the creation, processing or storage of data in digital form, where such data is provided by the consumer, and (c) a service allowing sharing of and any other interaction with data in digital form provided by other users of the service.”⁹

There are also some sector-specific rules applicable to some types of online platforms. The electronic communications rules apply to the *electronic communications service*, defined as a “service normally provided for remuneration which consists wholly or mainly in the conveyance of signals on electronic communications networks, including telecommunications services and transmission services in networks used for broadcasting, but exclude services providing, or exercising editorial control over, content transmitted using electronic communications networks and services; it does not include information society services (...) which do not consist wholly or mainly in the conveyance of signals on electronic communications networks”.¹⁰ Those rules

⁸ Art. 1(1b) Directive 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services, OJ [2015] L 241/1.

⁹ Proposed Article 2(1) COM(2015) 634.

¹⁰ Art. 2(c) Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive), OJ [2002] L 108/33, as amended by Directive 2009/140 (Better Regulation Directive).

apply to traditional telecommunications services but their applications to communications platforms is not totally clear and has been different between Member States,¹¹ The proposed reforms of the rules make clear that the electronic communications services will apply to communications platforms.¹²

The media rules apply to the *audio-visual media service* defined as “service as defined by Articles 56 and 57 TFEU which is under the editorial responsibility of a media service provider and the principal purpose of which is the provision of programmes, in order to inform, entertain or educate, to the general public by electronic communications networks (...), and an audio-visual commercial communication”.¹³

(b) Ex-post vs ex-ante rules

Rules may also be categorised according to their means of operations:

- Ex-post rules apply *after a firm commits* certain conducts. This is the case for the antitrust part of competition law or for consumer protection.
- Ex-ante rules apply *before the firm commits* a conduct in order to prevent such conduct. This is the case for the merger control part of competition law or for many sector-specific rules.

The ex-ante rules are, in general, easier and more effectively applied but they are more intrusive and hence may decrease innovation. However, the distinction between ex-post and ex-ante rules should not be overstated (see Larouche, 2000) as ex-post rules have deterrent effects that take place ex-ante while the violation of ex-ante rules can only be condemned ex-post.

Often, general rules are of ex-post application (this is for instance the case of competition rules or consumer protection rules) while sector-specific rules are of ex-ante application (this is for instance the case of the electronic communications rules). But that it is not necessarily, nor always, the case (this is for instance the case of the merger rules).

¹¹ BEREC Report of January 2016 on OTT services, BoR (16) 35.

¹² See Article 2(5) of the proposed EEC defining interpersonal communications service as “a service normally provided for remuneration that enables direct interpersonal and interactive exchange of information via electronic communications networks between a finite number of persons, whereby the persons initiating or participating in the communication determine its recipient(s); it does not include services which enable interpersonal and interactive communication merely as a minor ancillary feature that is intrinsically linked to another service.”

¹³ Art. 1(1a) 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 (Audiovisual Media Services Directive), OJ [2010] L 95/1. According to Article 57 TFEU, services shall be considered to be ‘services’ within the meaning of the Treaties where they are normally provided for remuneration.

2.2. General non-discrimination rules

2.2.1. General non-discrimination rules applicable to B2B and B2C transactions

(a) Protection of effective competition and fair business practices.

Competition Law

Competition law mainly applies to firms having market power. As explained in Sections 1 and 3, the determination of market power for online platforms is difficult because of the characteristics of the digital economy (direct and indirect network effects, experience curve of self-learning algorithms, multi-sided markets, multi-homing, rapid pace of innovation ...).

Competition law applies ex-post when prohibiting anti-competitive agreements and abuses of dominant position. Article 101(1d) TFEU states that anti-competitive agreements may be those which “*apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage*”. Article 102(c) TFEU states that abusive practice may consist in “*applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage.*”

According to de la Mano, Nazzini and Zenger (2014: 523-538), EU competition policy condemns several types of discriminatory practices.

The first type of condemned practice is *exclusionary discrimination* which leads or is likely to lead to the actual or potential exclusion of an efficient competitor. Such exclusionary effects can either affect the dominant firm’s rivals (primary line discrimination) or the dominant firm’s downstream customers (secondary line discrimination). Often, such discrimination takes place through predatory pricing, exclusive dealing, loyalty rebates and tying/bundling, and should meet the legal conditions of those types of abuses to be condemned.

Naked discrimination has been dealt with more rarely by competition authorities and Courts. In this context, Ibanez Colomo (2014) explains that Article 102 TFEU has so far been applied more to cases of external discrimination¹⁴ than to cases of internal discrimination. Thus, legal certainty is higher in the former case than in the latter. Some consider that, to be condemned, an internal discriminatory behaviour should be assimilated to a price squeeze and meet the legal conditions set in *Telia Sonera*. Hence, there is no requirement of an essential facility. Others, such as Ibanez Colomo, submit that internal discrimination should only be condemned in case of essential facility for reasons of legal consistency with other exclusionary abuses and for economic reasons. The issue will be clarified in the context of the *Google Shopping* case which is currently pending before the General Court of the EU.¹⁵

¹⁴ See for instance, Commission Decision of 10 Feb. 1999 relating to a proceeding pursuant to Article 90 of the Treaty (Case No IV/35.703 – *Portuguese airports*), O.J. 1999, L 69/31.

¹⁵ Case T-612/17 *Google and Alphabet v. Commission*, pending.

It is also interesting to note that the Commission Guidance Paper on exclusionary abuses considers, in the context of refusal to deal and price squeeze, that change of practices, i.e. a termination of an existing supply arrangement, is more likely to be found abusive than a *de novo* refusal to deal. This is because the existing supply can be an indication that access was given at a fair condition and/or because the relationship-specific investments made by the access seekers may need to be protected.¹⁶

The second type of prohibited practice is *exploitative discrimination*, where the dominant firms reduce consumer welfare by extracting consumer surplus without exclusionary impact on competitors. However, competition authorities have notoriously been reluctant to condemn exploitative practices as they do not want to become price regulators.

The third type of prohibited practice is *discrimination based on nationality* or the geographical price discrimination. Such prohibition is more related to the objective of internal market than the objective of consumer welfare and is dealt with below in this section.

The fourth type of prohibited practice is *price discrimination which distorts the market* by applying different prices to equivalent transactions thereby placing them at competitive disadvantage, but without requiring the exclusion of rivals. As explained by de la Mano, Nazzini and Zenger (2014:525) the anti-competitive effect of this type of abuse is not the foreclosure of competitors but the distortion of the competitive process on the downstream market. Although in recent years the enforcement of the Commission moved away for this type of abuse to concentrate of the first and the third type of discrimination, the text of the Treaty explicitly prohibit such abuse and the early case-law of the Court has clarified the three conditions for its applications: (i) equivalent transactions, (ii) dissimilar conditions, (iii) competitive disadvantage.

Competition law also applies ex-ante when reviewing concentrations. This review takes place at the EU level by the Commission when the concentration has a Community dimension. In this context, the Commission will prohibit the concentration or require remedies when the risk of anti-competitive discrimination increases. In particular in case of vertical mergers, when the operation leads to the ability of, and incentives for, the merging parties to foreclose¹⁷ the access to inputs or customers through discrimination and such foreclosure is detrimental to consumer welfare, the Commission may impose an obligation not to discriminate against rivals, when authorising the merger.¹⁸ The Commission has applied this behavioural remedy in several recent cases involving digital platforms.¹⁹

¹⁶ Para 84 of Guidance of 3 December 2008 on the Commission's Enforcement Priorities in Applying Article 82 EC Treaty to Abusive Exclusionary Conduct by Dominant Undertakings O.J. [2009] C 45/7.

¹⁷ Foreclosure is defined as any instance where actual or potential rivals' access to supplies or markets is hampered or eliminated as a result of the merger, thereby reducing these companies' ability and/or incentive to compete: para 18 of the Commission Guidelines of November 2007 on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings, O.J. [2008] C 265/6.

¹⁸ Paras 29-77 of the Commission Guidelines of November 2007 on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings, O.J. [2008] C 265/6.

¹⁹ See recently the Commission Decision of 6 December 2016, Case M.8124 *Microsoft/LinkedIn*.



National trade practice laws

Next to competition law that is limited to firms abusing their dominant position or concentrations that significantly affect effective competition, some national trade practice laws go further and can, under some conditions, be relied upon in case of discrimination imposed by internet platforms. For instance, the French Commercial Code²⁰ sanctions the abuse of economic dependency when three cumulative conditions are met: an economic dependency, the abuse of this dependency and an impact on the competitive functioning or structure of the market. The Belgian Economic Law Code sanctions the unfair practices in B2B relationships.²¹

National tort laws

In all Member States, the standard tort law may be applied to get damages when unfair practices have been committed or when the legitimate expectations have been deceived. Each Member States have its own tort law, but most of them follow similar general principles.

(b) Protection of the internal market

Article 18 of the TFEU prohibits any discrimination on grounds of nationality. This prohibition has led to many Court cases and several legislative instruments.

When it comes to EU legislation, the Services Directive²² prohibits discrimination based on the service recipient's nationality or residence.

The Commission also proposed in May 2016 a Regulation on geo-blocking.²³ Geo-blocking occurs where traders operating in one Member State block or limit access to their websites or apps of customers from other Member States wishing to enter into cross-border commercial transaction. In addition, discrimination occurs through other actions by traders involving the application of different general conditions of access to their goods and services with respect to such customers from other Member States, both online and offline. In particular, the proposed Regulation aims to prevent discrimination based on the nationality, place of residence or place of establishment of customers beyond the Services Directive which is argued not to have sufficiently addressed discrimination of customers.²⁴

²⁰ Article L-420-2 of the French Commercial Code.

²¹ Article VI.104 of the Belgian Economic Law Code.

²² Article 20 of Directive 2006/123 of the European Parliament and of the Council of 12 December 2006 on services in the internal market (Services Directive) [2006] OJ L 376/36.

²³ Proposal of the Commission of 25 May 2016 for a Regulation of the European Parliament and of the Council on addressing geo-blocking and other forms of discrimination based on customers' nationality, place of residence or place of establishment within the internal market, COM(2016) 289.

²⁴ Recital 3 of the Proposal for a Regulation of the European Parliament and of the Council on addressing geo-blocking and other forms of discrimination based on customers' nationality, place of residence or place of establishment within the internal market and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC, 25.5.2016, COM(2016) 289 final.

(c) Protection of human rights

Non-discrimination is also a human right. Article 21 of the Charter of fundamental rights of the EU prohibits any discrimination based on any ground such as sex, race, colour, ethnic or social origin, genetic features, language, religion or belief, political or any other opinion, membership of a national minority, property, birth, disability, age or sexual orientation. This prohibition has also led to several EU laws.²⁵

2.2.2. Additional rules for B2C contracts

In addition to general laws, consumers enjoy additional protection when dealing with professionals because of the frequent imbalance of power in B2C contracts. Thus, consumer protection rules apply to B2C contracts, i.e. when a (professional) trader²⁶ deals with a (non-professional) consumer,²⁷ but not to B2B nor to C2C contracts. They protect the consumers on the retail markets and not the traders on the wholesale markets.

In principle, the consumer protection rules do not prohibit more discriminatory practices than the general anti-discrimination rules but imposes additional transparency obligations which can make the general rules more effective. For instance, price discrimination is not prohibited *per se* as long as traders inform consumers about the prices, or how they are calculated. However, the combination of personalised pricing with unfair commercial practices is prohibited. In its 2016 UCPD Guidance,²⁸ the European Commission gives the example of the use of information gathered through profiling to exert undue influence, such as an airline or a railways company falsely claiming that only a few tickets are left after finding out that a consumer is running out of time to buy the ticket. That can be considered as a misleading commercial practice which is prohibited.²⁹

2.3. Semi-horizontal rules

The E-Commerce Directive does not impose specific non-discrimination obligations on the providers of information society service. However, Article 5 of the E-Commerce Directive imposes transparency obligations which are stricter than those imposed under the general consumer protection rules. The provider of the services should give at least the following

²⁵ On the basis of Article 19 TFEU.

²⁶ Trader is defined as ‘any natural person or any legal person, irrespective of whether privately or publicly owned, who is acting, including through any other person acting in his name or on his behalf, for purposes relating to his trade, business, craft or profession’: art. 2(2) CRD, also art. 2(b) UCPD.

²⁷ Consumer is defined as ‘any natural person who is acting for purposes which are outside his trade, business, craft or profession’: art. 2(1) CRD, see also art. 2(a) UCPD.

²⁸ Guidance of the European Commission services of 25 May 2016 on the Implementation/Application of Directive 2005/29/EC on unfair commercial practices, SWD(2016) 163, p. 146.

²⁹ In line with that, one of the commercial practices which are in all circumstances to be considered unfair constitutes a false statement ‘that a product will only be available for a very limited time, or that it will only be available on particular terms for a very limited time, in order to elicit an immediate decision and deprive consumers of sufficient opportunity or time to make an informed choice’: Point 7 of Annex I of the Unfair Commercial Practice Directive.

information: name, address, trade register, VAT number, details of the service, supervisory authority if any.

Some Member States have adopted national rules that apply to all, or most, digital platforms. For instance, according to the French Law on the Digital Republic,³⁰ platform operators (including search engines, aggregators, online marketplaces and collaborative platforms) must comply with a fairness/good faith principle towards their users (both professional and non-professional). Platforms should inform users about:

- any contractual or ownership relation with the companies, institutions or persons that are referenced;
- whether these entities make a payment (or other form of remuneration);
- the potential impact that such remuneration could have on how content is classified on a platform, and on the goods and services proposed on the platform.³¹

2.4. Sector-specific rules

(a) EU Electronic Communications Law applicable to some communications platforms³²

The Universal Service Directive³³ does not impose specific non-discrimination obligations on the providers of electronic communications services.³⁴

Article 21 of the Directive imposes transparency obligations which are stricter than those imposed under the general consumer protection rules. Moreover, Article 23a of the Directive imposes equivalence obligation to the benefit of disabled end-users.

(b) EU Media Law to some media platforms

The Audio-Visual Media Directive³⁵ does not impose specific non-discrimination obligations on the providers of audio-visual medial services.

³⁰ In Germany, a temporary joint commission of the federal states and federal ministries proposed in June 2016 transparency rules for online intermediaries. They would have to inform users about the main criteria of aggregation, selection and presentation of content; declare if other criteria than the relevance criterion regarding enquiries are taken as basis for the process of selection and ranking; and make public whether ideological, religious or political criteria are employed for ranking results. Affected would be "online intermediaries", i.e. particularly search engines and social media services using recommendation functions.

³¹ Art. 49 Law for the Digital Republic. Draft implementing decrees: detail the information that must be given by different platforms, set at 5m unique visitors per month the threshold above which platforms are obliged to develop best practices with a view to reinforcing the fairness/good faith principle (Article 50 Law for a Digital Republic).

³² Some non-discrimination obligations apply to electronic communications networks (Articles 4 and 7 of the universal service directive) or to Internet access services (Article 3 of the Open Internet Regulation).

³³ Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive), OJ [2002] L 108/51, as amended by Directive 2009/136.

³⁴ However, there are non-discrimination obligations for the services part of the universal service scope.



Article 5 of the Directive imposes transparency obligations which are stricter than those imposed under the general consumer protection rules. The provider of the services should give at least the following information: name, address, details of the service, supervisory authority if any.

³⁵ 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 (Audiovisual Media Services Directive), OJ [2010] L 95/1.

3. Insights from the Economic Literature

In the following, we discuss in detail the economic literature that has explicitly considered a platform's incentives to engage in discriminatory actions with respect to content and service providers, and has conducted a welfare analysis. Thereby, we focus on the literature that is applicable to *online (software)* platforms.

3.1. Preliminaries

3.1.1. Economics of two-sided markets

Online platforms, as they are understood in this report (see Definition in Section 1.2), operate a two-sided market, where they intermediate the information flow between two distinct groups: consumers, on the one hand, and content providers, on the other hand. As indicated above, platforms are typically characterised by the existence of strong indirect network effects from at least one group to the other. This facilitates market concentration and leads to skewed pricing patterns. In particular, we wish to highlight two fundamental economic insights from these types of markets a priori that are relevant for the remainder of this section.

First, platforms will generally price both groups, i.e., consumers and content providers differently; and offer a lower price to the user group that is relatively more important for the functioning of the two-sided market. In theory, even for a monopolistic platform, it can be optimal to subsidise one group (impose a negative price) and to charge the other group a high price. In practice, negative prices are usually not feasible. In platform markets, it is not unusual that the consumers do not pay anything at all (i.e. which belong to the group that is deemed relatively more important), whereas the other group, the content providers, are charged a positive price. In two-sided markets, the two prices relating to consumers and content providers, respectively, have to be considered simultaneously (even if one of the prices is zero), and the platform will optimise its price structure considering the reciprocal effect of both prices on its respective user groups. Generally, in two-sided markets, there is a see-saw principle at work: if the price of one group goes up, the price of the other group goes down.

Second, online platforms typically demand a transaction fee or a revenue share from the content providers. Consequently, in these cases, platforms seek to maximise the transaction fees or the content providers' revenue in the market. This however, often entails that the platforms' incentives are well aligned with the incentives of the content providers, and sometimes even aligned with maximising total welfare. The reason is that the platform demands a piece from a pie, which, for instance, can be increased by the number of transactions in the market. Therefore, it is in the platform's best interest to maximise the size of that pie. A greater pie, however, usually means greater welfare. Thus, leaving distributional issues aside, from a static perspective, platforms often (but not always!) behave in a welfare-maximising manner.



Therefore, it should not be too surprising if selling prominence by a platform increases industry profits, and sometimes even total welfare.

However, this does not necessarily mean that consumer welfare increases as well. Particularly, it is a well-known result that two-sided markets that charge only one side tend to favour the paying side's interest—here the content providers', and not the consumers' (see, e.g., Hagiu & Jullien, 2011). Thus, there is potentially scope for a discriminatory bias of the platform in the sense that it favours those content providers, that pay the most, but which do not represent the best possible match for consumers.

The preceding discussion highlights that in the context of platforms, special attention must be paid to the distributional effects of discrimination, i.e. how it affects total welfare vs. consumer welfare, the profits of content providers vs. the platform, and how this may redistribute profits among content providers, especially between the prominent and non-prominent content providers. Even when discrimination may not be a concern from a total welfare standard, it may well be a concern from a consumer welfare standard. And even more importantly, discrimination may further advantage those content providers that are already strong, stifling competition in the long run. That is, even if there are no concerns from a static perspective (i.e. in the short run), there may, due to this distributional impact, yet be concerns from a dynamic (i.e. long run) perspective, because such discriminatory actions could diminish innovation and investment incentives by (non-prominent) content providers or even induce the market exit of content providers.

The extent to which such a bias can occur depends on the market power of the platform, and can be limited by the fact that the platform needs to attract consumers. Countervailing forces may therefore be the existence of a competing platform, or the fact that the platform is concerned about losing reputation, which may jeopardise consumer demand not only for the platform itself, but also for some of its own other services (cf. Burguet, Caminal & Ellman, 2015). In reverse, this means that the extent to which a platform engages in biased intermediation could be considered a measure of market power. Similarly, the extent to which a platform can appropriate the additional profits of content providers stemming from biased intermediation can be a sign of market power.

3.1.2. Relation to the literature on net neutrality

Generally, there exists a large economic literature in the context of the net neutrality debate on the effects of discriminatory actions (e.g. paid prioritisation) for *broadband infrastructure* platforms, i.e. internet service providers. We will include insights of this literature, where applicable to the present context. However, much of this literature is not immediately applicable to online platforms, because it is usually assumed that content and service providers differ in

their requirements for Quality of Service (QoS).³⁶ For example, an email application is more tolerant towards network congestion than a video-conferencing application, and therefore the video-conferencing application requires a minimum QoS to be functional. In other words, in *broadband infrastructure* platforms content and service providers differ with respect to their objective “need” for prioritisation.

Such an objective need for prioritisation (e.g. gaining prominence in a search result) generally does not exist in online platforms. Put simply: an application, service or product that is intermediated by an online platform does not *directly* perform better (in a technical sense) just because it is displayed more prominently. Neither does it require a minimum level of prominence in order to be functional. Of course, listing a provider more prominently on the platform will generally increase demand for the application, service or product of the provider. This can then be the source of demand- or cost-side economies of scale, which in turn may then *indirectly* improve the application, service or product of that provider. But this is generally true for all apps, services and products that are intermediated by online platforms, and, thus, there exists comparably little variation and no objective technical benchmark for the “need” to be prioritised.

3.1.3. Relation to the literature on consumer search

Next to the applicable literature on *net neutrality*, we will draw many of our insights from the burgeoning stream of the economic literature that is concerned with *directed consumer search and biased intermediation*. This literature assumes that consumers have to search for content that fits their “need”. Before selecting a content provider, consumers search and sample content providers until they deem that the additional effort of gathering more information is not worth the additional effort. This literature then investigates the incentives and consequences of steering consumers towards specific products or services; in particular, by making them more prominent for users (e.g. listing them higher in the search results).³⁷

A simplifying – yet useful – assumption that is often made in that literature is that one group of consumers is generally *informed* about all product and service offers (because they have little search costs), and therefore these consumers are not influenced by the platform’s choice of prominence regarding content providers (ranking); whereas the other group of consumers is *uninformed* (because their search costs are high), and tend to select the content provider that is listed more prominently (ranked first), without even considering the others. For this latter group, the platform’s choice of which content provider to make prominent would give it full control over which content provider is chosen. Therefore, the results usually depend crucially on how large the uninformed consumer group is.

³⁶ See Easley, Guo & Krämer (2017) for a recent overview and the modelling assumptions of the economic literature on net neutrality.

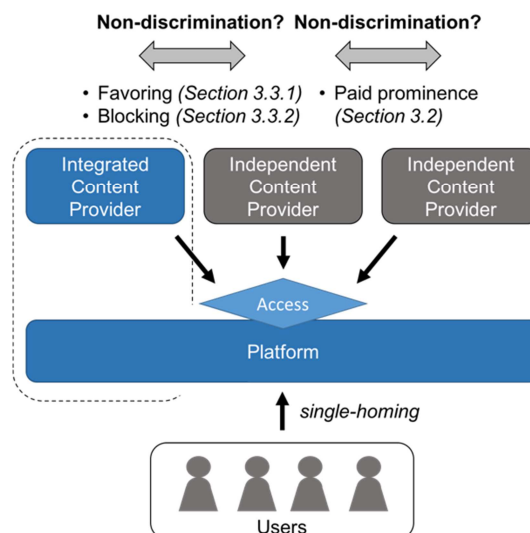
³⁷ Of course, such an intermediation bias can be enshrined in the ranking algorithms and does not require ongoing manual intervention.

3.1.4. Scope and organisation of this section

Furthermore, we focus our economic survey on the effects of discriminatory actions in online platforms on those actions that aim at “prioritising” one provider over another. In the absence of different technical requirements, as discussed above, in online platforms this is equivalent to granting a provider “prominence”, which in turn, everything else being equal, directs those users that tend to follow the platform’s recommendation to that provider and, in turn increases its demand. As illustrated in Figure 1, we can then differentiate between

- i) those settings where the online platform is independent of the providers on its platform,³⁸ and
- ii) those settings where it is vertically integrated with at least one provider on its platform.

Figure 2: Non-discrimination rules in different settings depending on the relationship between the platform and content providers



In case i), the platform will sell prominence to the independent providers in return for a listing fee (either set by the platform or determined through an auction). We consider those scenarios in Section 3.2.

In case ii), which we consider in Section 3.3, the platform does not levy a fee, but instead seeks to reap higher profits through its own integrated provider. In this case, we can additionally differentiate between those actions that aim at granting the own provider more prominence (Section 3.3.1), and those actions that aim at excluding rival providers (Section 3.3.2). Of course,

³⁸ In reality, independence of the content provider and the platform may not be a matter of black and white, as the platform may, for example, have a minor share in the ownership of the content. Nevertheless, in the following it will be useful to distinguish between the two extrema, where content providers are either fully independent, or fully vertically integrated. It will be seen that the welfare implications do not differ considerably between these two extremes, and they therefore provide useful benchmarks for all intermediate cases.



because favouring the own content comes at the cost of disfavouring the rival content, the transition between favouring own content and blocking rival content is fluid.

In what follows, we predominantly rely on game theoretic models and analyses to investigate the counterfactual effects of selling or granting prominence. Thereby, we are particularly interested in how prominence generally affects welfare in terms of consumer surplus, producers (or industry) surplus and total welfare. Where available, we also report results from empirical analysis. Robust empirical analysis on this specific topic is scarce, however. First, this is due to the fact that it is necessary to have information on 'unobservables', like consumers' preferences, content providers' costs, or the platforms' ranking algorithm. This information is either typically private and/or proprietary. Second, empirical approaches in this domain usually suffer from numerous endogeneity concerns. For example, due to the missing counterfactual, it is not distinguishable whether a content provider's profits are higher because it was ranked higher, or whether it is ranked higher because it makes higher profits. Some exceptions are Edelman and Lai (2016) and Ursu (2017), who exploit an exogenous change in the presentation of the listing, or the ranking algorithm itself, in order to determine causal effects of rankings on consumer choice. Third, an empirical counterfactual analysis of a regulatory remedy, such as the non-discrimination obligation, would require that there exists variation with respect to the use of that remedy across different platforms or legislative regions. However, in the current absence of such variation, a counterfactual analysis cannot be performed empirically.

The lack of empirical research on the effect of a non-discrimination remedy for platforms should not be used as an argument that it is premature or even impossible to assess its effectiveness from an economic policy perspective. First, as we will highlight below, there exists an already rich body of theoretical literature on the effects of granting prominence in online platforms, which has brought forth some robust insights, on which a policy recommendation can be built. Second, the lack of empirical research, mostly for reasons that the necessary information is not accessible to independent researchers, has also in the past not refrained policy makers from enacting new regulation. For example, also in the context of net neutrality, there is until today a void of empirical papers, and yet a non-discrimination policy has been enacted both in the US and in the EU. As laid out in Section 1, numerous regulatory bodies, predominantly in France, have already identified platform non-discrimination as a possible policy arena, and therefore, it is insightful to collect and summarise the available economic insights now in order to inform the stakeholders involved in this debate.

3.2. Selling prominence to independent content providers

The literature on paid prominence can be subdivided into two streams. The first stream can be considered to deal more with an e-commerce context, where a platform intermediates consumers with content providers that offer products or services to consumers for a price. As an example, consider a sponsored search scenario on Amazon or Expedia, where those merchants or hotels that pay the highest ranking fee to the platform are listed on top of the search results

and are thus considered first by the consumers. Here, the providers' price is the main strategic variable, and consequently, this stream of the literature is interested in how paid prominence affects content providers' prices.

By contrast, the second stream of the literature considers platforms that intermediate content providers that offer services for free and derive revenues from the usage of their services (e.g. through advertisements). As an example, consider a classic news websites that is listed in the sponsored ranking part of a general search engine and thus considered before other news websites that are listed further below (possibly in the organic search results). Here, the content providers' main strategic variable is the quality of the services that they offer. As will be highlighted in the following, sponsored ranking can have very different welfare effects in each of the two environments, and therefore yield very different policy recommendations. Therefore, we will consider each environment separately next.

Moreover, we highlight that the insights from this literature are not limited to a search context in the narrow sense (i.e. to "search engines" of some type), but apply to online platforms more generally. This is because it is the very purpose of online platforms to organise content in order to facilitate the content discovery process of its consumers (Renda, 2015). In this context, platforms need to make some content more prominent than others. One can roughly differentiate between "organic prominence", which is the prominence that a content provider receives independent of any side payments, and "paid prominence", i.e. prominence that is (partly) influenced by payments from the content provider to the platform. Most often, paid prominence will take the form of a sponsored ranking. Therefore, we will use these terms interchangeably.

3.2.1. Impact of paid prominence when content providers compete in prices

The impact of selling prominence (in a platform's ranking) on independent content providers' prices is generally well studied in the economic literature (see, e.g., Arbatskaya (2007), Armstrong, Vickers & Zhou (2009), Zhou (2011), Rhodes (2011), Xu, Chen & Whinston (2011), and Armstrong & Zhou (2011)). This literature builds on three main assumptions that are meant to represent the main characteristics in any online search environment.

Assumption 1: it is assumed that the content providers' offers (e.g. prices or quality of the offer) are not observable to consumers until they have inspected that content providers' website, product or service. This constitutes the need for consumers to search for the content provider that offers her or him the highest utility among the available content providers. Each inspection of a content provider incurs a small cost for consumers (e.g. opportunity costs of time). Although it can be argued that the search costs in the online environment, where each content provider is just "one click away", are significantly smaller than in an offline environment (see, e.g., Copenhagen Economics, 2015), it is not reasonable to assume that such search costs do not

exist at all. This is particularly true for mobile browsing, where search costs have been found to be higher, and thus ranking effects are augmented (Ghose, Goldfarb & Han, 2013). In general, the observation that there exist information intermediaries, such as Google Search, alludes to the fact that non-negligible search costs exist. This assumption is therefore realistic and reasonable.

Assumption 2: it is assumed that prominence alters the order in which consumers search for content. Consumers tend to browse through the search results from top to bottom. Although the specific assumption on the consumers' search order varies slightly between the models, all assume that at least a fraction of the consumers considers the prominent (i.e. top-listed) content provider(s) first. This assumption is consistent with the extant empirical evidence (see Edelman and Lai, 2016; Ursu, 2017) and therefore realistic.

Assumption 3a: with some notable exceptions (to be discussed in Section 3.2.2), in this strand of the literature, it is assumed that there are no systematic quality differences between the services or products sold by the content providers. Either the services or products are assumed to be homogenous (identical) and content providers just differ through (ex-ante unknown) prices, or content providers are differentiated horizontally, i.e. with respect to how well they match the idiosyncratic "need" of a given consumer—however, there is no agreement between different users as to which content provider is generally better.

This assumption is clearly unrealistic and extreme, and made mainly for expositional clarity. In fact, in Section 3.2.2 we discuss those papers that have made the other extreme assumption, i.e., where products and services only differ vertically (i.e. in quality), but not horizontally. In reality, both types of differentiation are likely to exist simultaneously; and it will be seen that they have opposing effects on the results. Therefore, it is useful to disentangle the two extremes, and to study each in isolation, before one can draw conclusions on the combined effect, which will be discussed in Section 3.2.3. The assumption that there are no systematic quality differences between the content providers is therefore still useful in the sense that it assumes a level playing field between the content providers ex-ante. Thus, should there be any systematic differences between content providers (e.g. with respect to profits) due to prominence ex-post, then this can be uniquely attributed to the effect of prominence.

Based on these three main assumptions, the literature has identified the following effects of sponsored rankings:

- a) The (top-listed) prominent content provider earns significantly more gross profits (before deduction of any listing or commission fees) than a non-prominent content provider (Armstrong & Zhou 2009; Rhodes, 2011), and generally a content provider's gross profit will fall, the less prominently a content provider is listed (Arbatskaya, 2007; Zhou, 2011; Xu, Chen & Whinston, 2011). Therefore, sponsored ranking increases the variance in content providers' profits.

- b) If the platform bases its ranking on the listing fees that it can attain from content providers, then the top-listed content provider will charge the highest price to consumers, and generally, content providers' prices will decrease in the order in which they are listed (Armstrong & Zhou, 2011). All prices tend to be higher than in the absence of a sponsored ranking and consumers' surplus is lower than in the case without sponsored ranking (Zhou, 2011; Armstrong & Zhou, 2011).
- c) Industry profit (content providers' profits plus the platform's profit) increases in the presence of a sponsored ranking. That is, the platform has an incentive to introduce a sponsored ranking, if it is able to expropriate the benefits of prominence from the content providers (Armstrong, Vickers & Zhou, 2009; Armstrong & Zhou, 2011).
- d) If the benefits from becoming prominent on a particular platform are relatively high, then the content providers are likely to compete fiercely for becoming prominent and the platform can expropriate most of the industry surplus. In the extreme, content providers may end up in a *prisoner's dilemma situation*, i.e. the benefits of prominence are more than fully expropriated by the platform, and the content providers may earn less than in a situation in which they are ranked randomly (Arbatskaya, 2007; Armstrong & Zhou, 2011).
- e) Total welfare is likely to be lower in the presence of a sponsored ranking (Zhou, 2011; Armstrong & Zhou, 2011).

The intuition behind these results is as follows: in the absence of systematic quality differences between content providers (Assumption 3a), the platform will base its ranking decision on the commission fees that it attains from the content providers. It will simply select the content provider that bids the highest commission fee. This has two effects on prices. First, the commission fee acts like a marginal "production" cost for the content provider. Consequently, everything else being equal, the content provider that has paid the highest commission fee also has the highest marginal cost, and thus charges the highest price. Second, in the top position consumers' demand is relatively inelastic, because the uninformed consumers are more likely to buy from the content provider at the top. Therefore, even without consideration of commission fees or marginal costs, the content provider in the top position is inclined to charge higher prices to consumers. For the same reasons, prices and profits decrease with a content provider's rank in the search results, because demand becomes more and more elastic, as less and less consumers will eventually consider this content provider.

Consequently, consumers are systematically steered towards the more expensive content providers and thus consumer surplus is reduced in the presence of a sponsored search, where content providers just differ in "prices" but not in "quality". For the same reason, industry profit is increased, as more rent can be expropriated from consumers. This trade-off between consumer surplus and industry surplus becomes more pronounced, the more effective a platform is in steering consumers towards the top-listed content providers. In other words, the

more uninformed consumers are in the market, the less elastic is the demand for the top-listed content provider, the higher its price will be. But at the same time, the top position becomes more valuable to the firms, which intensifies competition for the top position and increases the prisoners' dilemma situation for content providers, so that the platform will be able to appropriate more of the total industry profit. This is consistent with empirical evidence by Blake, Nosko & Tadelis (2015) from a large field experiment with Google Search ads done at eBay. They show, among other things, that content providers may be playing a prisoner's dilemma when advertising their brand.

In summary, this means that in the e-commerce scenario where content providers charge prices for their products or services to consumers, the more valuable the top position in a sponsored ranking is, the more profits will the platform make at the expense of content providers' and consumers' surplus.

3.2.2. Impact of paid prominence when content providers compete in qualities

After having identified the likely detrimental effects of a sponsored ranking regime on welfare when content providers compete in prices (that are not related to significant quality differences), we now describe the likely effects of a sponsored ranking regime when content providers compete in qualities. That is, whereas the reasonable Assumptions 1 and 2 from above continue to apply, this strand of the economic literature considers an alternative third assumption:

Assumption 3b: it is assumed that content providers systematically differ with respect to the quality that they offer. Either it is assumed that content providers systematically differ in their probability that they meet the consumers' needs (e.g. they differ in their relevance towards a specific keyword), or it is assumed that content providers offer products or services of objectively different qualities. In all cases, consumers are homogeneous in the sense that *all* consumers prefer content providers of higher quality or relevance, everything else being equal, and content providers are assumed not to be significantly horizontally differentiated. Sometimes "quality" is considered to be exogenous (e.g. Athey & Ellison, 2011; Chen & He, 2011; Chen & Zhang, 2016), but sometimes content providers can also invest in quality (e.g. de Cornière & Taylor, 2016; Krämer & Zierke, 2017). Content providers either do not directly charge consumers a price for accessing their services (and are advertisement financed), or they all charge the same prices.³⁹ In any case, content providers do not compete in prices.

As discussed above, Assumptions 3a and 3b represent the extremes of the possible spectrum of possibilities, where products are "only" horizontally differentiated (Assumption 3a) and content

³⁹ In Chen & He (2011), content providers do compete in prices, but in the most relevant case (where consumers believe that the platform ranks content providers according to their qualities), all content providers charge the same price in equilibrium.

providers compete in prices, or, where there are systematic quality differences between the content providers, and content providers compete in qualities, but not in prices (Assumption 3b). The reality is likely to be in between the two extremes and the implications will be discussed in Section 3.2.3.

Based on Assumptions 1, 2 and 3b, the literature has identified the following effects of a sponsored ranking:

- a) Content providers that offer a higher quality, are of higher relevance, or are more efficient in producing quality content, generally make higher profits and therefore have a higher incentive to achieve a top position in the sponsored ranking. Consequently, high quality content providers will be willing to pay more for prominence in a sponsored ranking, and thus, content providers are ranked according to their quality (Armstrong, Vickers & Zhou, 2009, Section 3; Athey & Ellison, 2011; Chen & He, 2011; Chen & Zhang, 2016; de Cornière & Tayler, 2016; Krämer & Zierke, 2017).
- b) Therefore, the sponsored ranking effectively signals content providers' qualities to the consumers, and it is optimal for consumers to search for content providers in the order of the sponsored ranking. Consequently, taking content providers' quality as given, consumer welfare is higher in the presence than in the absence of a sponsored ranking⁴⁰ (Athey & Ellison, 2011; Chen & He, 2011; Chen & Zhang, 2016; de Cornière & Taylor, 2016).
- c) The top-ranked content provider is likely to have a higher incentive to invest in quality under a sponsored ranking regime; but a low-ranked content provider has a lower incentive to invest in quality under a sponsored ranking regime (de Cornière & Taylor, 2016; Krämer & Zierke, 2017). Generally, a higher-ranked content provider has a higher incentive to invest in quality than a lower-ranked content provider (de Cornière & Taylor, 2016). Consequently, under a sponsored ranking regime, the variance in content providers' qualities is likely to increase. Taking investments in quality into account, the overall effect of a sponsored ranking regime on consumers' surplus is ambiguous.
- d) Industry profit and (provided that consumer surplus is indeed positive) also total surplus tends to be higher under a sponsored search regime (Chen & He, 2011). However, under a sponsored ranking, the platform can expropriate a significant portion of the content providers' surplus, and a sponsored ranking is likely to exacerbate the quality and profit differences between content providers.

The intuition behind these results is as follows: the content providers that offer the highest qualities have the most to gain from being listed higher, and therefore, are willing to bid more to

⁴⁰ This assumes that, in the absence of a sponsored ranking, consumers would not search the content providers in the exact same (and therefore inferior) order. For example, this may be i) because the platform can only observe the content providers' quality imperfectly and therefore offer a different ranking in its organic search results, ii) because the organic search results are biased in some way (see Section 3.3.1 for incentives to do so), or iii) because consumers would search content providers more randomly in the absence of a sponsored ranking.

be in the top position. It can then be shown that content providers' (average) bids in the position auction of the sponsored ranking regime are generally monotonically increasing in the provider's quality, resulting in a quality-ordered ranking list. These theoretical results are consistent with empirical observations. For example, Yang & Ghose (2010) find in an empirical analysis of Google search that "firms, which tend to rank highly in organic search [are supposedly of higher quality], are more likely to benefit from sponsored search advertising" (p.618).

As consumers tend to go through the content providers from top to bottom (Assumption 2), and content providers do not differ significantly with respect to prices (Assumption 3a), they encounter the high-quality firms first, which makes their search for relevant and high-quality content more efficient. This drives up consumers' surplus.

In this context, one may wonder whether a sponsored ranking is the best mechanism through which content providers can signal their quality to consumers. Athey & Ellison (2011), for example, suggest that platforms could additionally reveal "finer information on quality", such as "bids, conversion rates, estimated textual relevance, or aggregates of these" to yet improve the efficiency of consumers search. We will return to these suggestions later in Section 5, when we discuss policy implications.

Moreover, one may also wonder how the sponsored ranking interacts with the simultaneously displayed organic search result. This relationship is, in fact, quite complicated and highly context dependent. Based on the economic literature, four general remarks can be made here. First, assuming an unbiased platform, it depends on how well the platform can observe the quality of the content providers (which is assumed to be private information of the content providers). If there is likely to be errors in the measurement of the quality, then the sponsored ranking can indeed be a more effective tool to reveal a content providers' quality (cf. Krämer & Zierke, 2017). Second, White (2013) shows that a platform may also have an incentive to reduce the quality of the organic search results in order to boost revenues from the sponsored ranking results. Put simply, if the organic search results are too good, i.e., they already rank the content providers according to their quality, then exactly those content providers that would have submitted the highest bids for the sponsored ranking, now have less incentives to do so. Third, it should not be overlooked that also the organic search results are to some extent a "sponsored ranking", because content providers can invest in search engine optimisation (SEO) to boost their ranking in the organic search results.⁴¹ In reverse, the sponsored ranking also often includes a "quality factor" (Google, n.d.), so that content providers are not solely ranked according to their bids, but according to their bid times the quality factor. Indeed, Yang & Ghose (2010) show empirically that SEO and SEM (search engine marketing, i.e. bidding to be placed in

⁴¹ In general, one can differentiate between "black hat SEO" and "white hat SEO" techniques. Whereas the latter is associated with investments in the content directly (which also benefits consumers and thus is generally welfare enhancing), the former is associated with investments into features that are intended to manipulate the ranking algorithm without providing additional user benefits.

the sponsored ranking) are complementary to each other: prominence in the organic listings is associated with a higher probability of click-throughs on sponsored listings, and vice versa. Fourth, in a context where Assumption 3b holds, i.e. where content providers compete rather in qualities than in prices, and where the search engine can observe the content providers' quality with some confidence and is unbiased in its intermediation, it is likely that the sponsored search results and the organic search results are highly correlated.

Finally, it is interesting to observe that a sponsored ranking regime can be shown to immediately influence content providers' incentives to invest in quality. Note that this result does not depend on the use of a "quality factor" in the sponsored ranking as mentioned above, although the use of a quality factor may additionally boost the content providers' quality investment incentives (Katona and Zhu, 2017).

Instead, de Cornière & Taylor (2016) highlight that content provider's investment incentives are governed by a scale effect and by a competition effect. The *competition effect* exerts a negative influence on content provider's qualities. This is because, given a specific ranking order, the sponsored ranking diverts consumer demand towards the top ranked content provider (by Assumptions 1 and 2, and irrespective of the quality of the content providers) and thus, there are fewer consumers for which the content providers actually compete. This drives down the incentives to invest in quality, when quality is the main strategic variable on which content providers compete. The *scale effect*, however, acts in opposite directions for a high-ranked vs. a low-ranked content provider. A top position in the ranking secures a content provider more consumer demand, and thus, due to economies of scale, an investment in content quality becomes more efficient. Consequently, by virtue of the scale effect, the top-ranked content providers have a higher incentive to invest in quality. The reverse effect is true for low-ranked content providers. Due to the sponsored ranking, they receive less demand than before, and consequently, they experience less economies of scale for their quality investments, lowering their incentive to invest in quality.

The combination of the scale and the competition effect unambiguously reduce investment incentives for a low-ranked content provider. As the scale and the competition effect go in opposite directions, the overall effect on a top-ranked content provider's investment incentive is generally ambiguous, but more likely to be positive the larger the scale effect is. Assuming a typical quadratic cost function, Krämer & Zierke (2017) show that the scale effect dominates the competition effect and thus, investments of the top-ranked firm tend to be higher in the presence of a sponsored ranking. The intriguing insight from this literature is that a content provider may offer a higher quality *because* it is listed higher in the sponsored search. Taken together with the previous insight that a higher quality content provider is also more likely to attain the top position, it is evident, that a sponsored ranking can have a significant effect on quality investment incentives.

The caveat of this result is that a sponsored ranking is likely to increase the quality spread between content providers (see c) above), i.e. it favours those content providers that already

have a stronger market position and reduces the demand, quality and profits of those content providers that are already lagging behind.

In summary, while a sponsored ranking may be welfare increasing (with respect to consumers' and industry surplus) in the short run, this effect in the variance of content providers' may be seen problematic from a long run perspective (see Section 4 for a more detailed discussion).

3.2.3. Summary and conclusions

Depending on whether content providers compete rather in prices or rather in qualities, the economic literature has identified quite different welfare effects of a sponsored ranking regime, provided that the platform is not integrated with one of the content providers. In case content providers compete in prices, the effects on consumer surplus and total surplus are likely to be negative, whereas if content providers compete in qualities, the welfare effects are likely to be positive.

In reality, content providers will compete in qualities and prices, and thus it is natural to ask, what will happen in such a situation. On the one hand, it is evident, that the results will then be a mix of the aforementioned, and therefore, the welfare outcomes are generally ambiguous. However, de Cornière & Taylor (2016) argue that "under fairly mild conditions" (p.35) the outcomes resemble rather those under quality competition, i.e., the top-listed firm offers the highest utility to consumers (utility being the difference between quality and price). Therefore, in the realistic case where content providers compete in prices and quality, a sponsored ranking is nevertheless likely to be welfare improving, both for consumers and for total surplus.

De Cornière & Taylor (2016) also make the point that whether content providers compete in prices or qualities is so decisive for the welfare outcomes, because in the former case, the payoffs between the consumers and the content providers are *conflicting*, whereas in the latter case they are *congruent*. In other words, when a sponsored ranking enables content providers to raise their price, then this generally is good for the content provider, but bad for consumers. Payoffs are thus in conflict. In reverse, when a sponsored ranking allows high quality providers to make higher profits, then providers have an incentive to raise their quality, which is good for the content providers and the consumers. The payoffs are congruent. This distinction between congruent and conflicting payoffs may therefore prove to be very useful for the discussion whether a policy intervention is warranted or not.

Across all modes of competition, i.e. whether content providers compete in prices or qualities, or whether payoffs are congruent or conflicting, the economic literature has shown that a sponsored ranking regime tends to amplify any pre-existing differences between the content providers. The gross profits of the prominent (top-ranked) content providers are generally higher than in the absence of a sponsored ranking. However, at the same time, both the theoretical as well as the empirical literature has highlighted that the platform may be able to expropriate a significant part of the content providers' gross surplus through a sponsored

ranking. Generally, the more it pays to be prominent, the more likely is the platform to be able to expropriate the content providers' surplus, and thus the more likely that it is ultimately the platform that gains the most. In reverse, content providers may end up playing a prisoners' dilemma, where no one can commit not to bid for a top-position in the sponsored ranking, but ultimately, all content providers are worse off by doing so.

3.3. Granting prominence to integrated content providers

3.3.1. Favouring own services

Whereas in the previous section we have considered the impact of a sponsored ranking where independent content providers pay the platform to be made more prominent, we now consider cases where a content provider does not pay to be made more prominent. The most natural way to think of this is when the content provider is vertically integrated with the platform. In other words, the platform can always fully expropriate the gross surplus of the prominent content provider and must not, as in the case of a sponsored ranking, rely on an imperfect rent extraction mechanism like an auction. Thus, as it was shown that the prominent content provider makes more profit than a non-prominent content provider, and since the platform can now fully expropriate the benefits of prominence from its vertically integrated content provider, we expect that under vertical integration the platform has an additional incentive to make its own integrated content provider prominent (see also Hagiu & Jullien, 2011).

However, we have also seen in the previous section that the platform was usually already able to extract a significant portion of the content providers' surplus in case of independent content providers. Thus, it should also not come as a surprise that the general insights of the previous section continue to hold under vertical integration (see de Cornière & Taylor, 2016).

An additional facet of vertical integration between a platform and a small subset of the content providers has been studied by de Cornière & Taylor (2014) as well as Burguet, Caminal & Ellman (2015). Both models consider how vertical integration by the platform interacts with the incentives to discriminate search results in favour of the platform's own content provider(s), when content providers are financed through advertisements, and the platform is financed through a sponsored ranking.

Burguet, Caminal & Ellmann (2015) assume that sponsored search is used mostly by content providers that compete in prices (merchants), whereas typical publishers (e.g. news websites) appear predominantly in the organic search results. However, the same merchants that buy prominence in the platform's sponsored ranking in order to advertise, also buy prominence (advertisements) on the publishers' websites. Under these assumptions, the platform may have an incentive to discriminate the organic search results in favour of less efficient publishers (with lower ad targeting rates) in order to be able to promote its sponsored ranking as a more effective advertising tool for merchants. In this way, it can steal business from the (efficient) publishers.

However, if the platform is vertically integrated with a subset of the publishers, then, everything else being equal, it has a *lower* incentive to bias the organic search results in favour of less efficient publishers, because it can internalise more of the publishers' business. This tends to be welfare increasing. At the same time, it now has an additional incentive to bias the organic search results in favour of its own publisher. This tends to lower welfare. The overall effect is thus ambiguous. However, even if the overall static welfare effect should be positive, the authors have concerns regarding dynamic efficiency, because the platform can "divert traffic from [independent] non-affiliates to turn the [own] publisher into a market leader" (p.45). De Cornière & Taylor (2014) come to a similar conclusion in a slightly different market environment: here, vertical integration can also potentially reduce an already existing bias in the platform's organic search results, but instead, also result in a systematic bias of the own integrated publisher. Again, the overall static welfare results are found to be ambiguous.

In an empirical paper, Edelman and Lai (2016) quantify the effect of clicks on organic and paid search results when Google introduced a prominent listing to its own integrated flight search service. They estimate that after the introduction of the prominent flight search service, clicks on paid listings (that relate to revenues from sponsored ranking) went up by about 65%, whereas clicks on organic listing were reduced by about 55%. They attribute this to the fact that after the introduction of the platform's own service, the consumers perceived the sponsored search results as more relevant than Google's flight search service (which was displayed in between the sponsored and organic search results) and therefore moved their clicks accordingly. This would be consistent with the above theory.

3.3.2. Blocking of rival content providers

Finally, one may wonder under which circumstances a vertically integrated platform has an incentive to block a rival content provider from accessing its platform altogether. Although, as discussed above, there have been several accusations of this kind, the economic incentives to actually do so are more nuanced. Here, some models developed in the context of the net neutrality debate (Dewenter & Rösch, 2016; Broos & Gautier, 2017) are informative, because the same concerns have been raised that vertically integrated internet service providers would have an incentive to block rival messaging or telephone services (e.g. WhatsApp).

The trade-off of whether to exclude a rival content provider or not can generally be framed in the context of a competition vs. a complementarity effect (see, e.g. Broos & Gautier, 2017). The *competition effect* is what typically comes to mind first in this context. By excluding the rival content provider, the platform can evade the competition and direct more consumers to its integrated service. However, consumers view the offer of the rival content provider generally as a complement to the platform itself. This is particularly apparent in the context of a two-sided market with indirect network effects, where consumers value the presence of (differentiated) content providers on the other side of the market (as in Dewenter & Rösch, 2016). Thus, the presence of the rival content provider generally increases the attractiveness of the platform to

consumers, which the platform in turn can monetise in one way or another. This is the *complementarity effect*.

Consequently, when rival content is actually of significantly higher quality than the integrated content (see Broos & Gautier, 2017), or when the rival content is sufficiently horizontally differentiated to the integrated content (see Dewenter & Rösch, 2016), then the complementarity effects dominates the competition effect and the platform does not have an incentive to exclude the rival content. However, if the rival content is not sufficiently (horizontally or vertically) differentiated from the platform's own content, then blocking may be an option. Evidently, when the rival content is of much lower quality, then it is not an actual competitive threat to the integrated content and therefore (e.g. due to reputation effects or the threat of litigation) there is little need and incentive to deny it access to the platform.

In the light of our previous insights, it is worth noting one more concern in this context. Especially in the case when rival content is of similar quality, then, instead of blocking, it may suffice to make the own content more prominent, which, as both contents are of similar quality, can be arguably done without raising much scrutiny. As shown in Section 3.2.2., this however may then lead to a stronger diversification between content providers in the long run, because higher prominence gives the integrated content provider stronger incentives to invest in quality, so that the own content eventually becomes significantly better indeed (compare also to Burguet, Caminal & Ellmann, 2015). Again, this may particularly raise concerns with respect to dynamic efficiency.

3.3.3. Summary and conclusions

Vertical integration can, but does not need to lead to own content bias. Especially if rival content is of much higher or much lower quality, then it is not likely that the platform will engage in search distortion or blocking. However, when rival content is of similar quality, and thus competition between the own integrated content and the rival content is particularly strong, then there may be additional incentives for the platform to favour its own content provider by making it more prominent (e.g. ranking it higher). This may then in turn induce a downward spiral, where the higher-ranked own content becomes better and better, and the lower-ranked content becomes worse and worse; a process that raises dynamic efficiency concerns. From a static perspective, however, the welfare effects of platforms' favouring their own content is ambiguous. Moreover, one should not forget that even in the presence of a bias, consumer search efficiency can still be higher with the platform than without it (Chen & Zhang, 2016).

Welfare effects of granting prominence to ...	<i>CPs compete in “quality”</i>	<i>CPs compete in “price”</i>
<i>... independent CPs</i>	<p>Static Efficiency: Welfare effects likely to be positive, both for consumers’ and total surplus.</p> <p><u>Dynamic Efficiency:</u> Paid prominence regime likely to stimulate investments in quality. However, quality spread between CPs likely to increase. Concern of less CP competition and variety in the long run.</p>	<p>Static Efficiency: Welfare effects likely to be negative, both for consumers’ and total surplus.</p> <p>Dynamic Efficiency: Paid prominence regime likely to yield prisoners’ dilemma for CPs, as benefits from prominence are increasingly expropriated by platform.</p>
<i>... vertically integrated CPs</i>	<p>Static Efficiency: Welfare effects likely to be positive, both for consumers’ and total surplus. However, platform can have an incentive to bias intermediation towards its own CP if a rival CP with similar content and quality exists.</p> <p>Dynamic Efficiency: Granting prominence likely to stimulate investment in quality of integrated CP; however, it may discourage rival CPs to invest in quality. Concern of less CP competition and variety in the long run.</p>	<p>Static Efficiency: Welfare effects likely to be negative, both for consumers’ and total surplus. Vertical integration allows platform to appropriate benefits from prominence perfectly.</p> <p>Dynamic Efficiency: Granting prominence may create strategic interaction between paid-for and organic CP placement on platform. Under vertical integration, platform has less incentive to favour high-price CPs, but more incentive to favour integrated CP in organic placement. Overall, the welfare effect is ambiguous.</p>

3.4. Whitelisting advertisements

Ad-blockers come in different forms, such as a browser plug-in, or as a mobile application. They all have in common that they are able to influence how consumers view the website of a content provider, because they control the intensity of advertisements on the website. Note that this does not mean that all ad-blockers are necessarily platforms in the way defined in Section 1, because if all advertisements are simply blocked, this does not mean that content providers or advertisers chose to affiliate themselves with the ad-blocker. However, this is



different if an ad-blocker sells exemptions from its advertisement filter list to those content providers that choose to become affiliates. In particular, this is the business model of the market leader Adblock Plus, which can therefore be considered a platform. In other words, Adblock Plus sells “prominence”, similar as in the case of a sponsored ranking, because the advertisements placed on websites of the affiliated content providers are (to some degree) still visible to consumers. The main difference compared to the platforms discussed in Sections 3.2 and 3.3 is that the ad-blocker mediates a “bad” instead of a “good” for consumers, which may lead to alternative welfare conclusions.

In this context, the first interesting insight is that content providers are likely to *increase* the intensity of ads that are shown on their websites in the presence of an ad-blocker vs. no ad-blocker. As shown by Anderson & Gans (2011), this is because the consumers that are most annoyed by ads will install an ad-blocker first. Thus, the remaining consumers, which still view ads, are on average more ad tolerant, and thus the content provider will increase the ad intensity on its website for these consumers. This can induce even more consumers to install an ad-blocker and lead to a downward spiral. In turn, advertisement levels go up further, content providers’ advertisement revenues decline, and content quality is likely to go down. In consequence, overall ad-blockers can therefore have negative implications for total welfare.

However, in the scenario above, the ad-blocker actually behaves in a non-discriminatory way, because it filters out all ads for those consumers that have installed the ad-blocker. Adblock Plus, for example, discriminates between different content providers/advertisers by selling exceptions from its filter list in return for a share of the re-gained ad revenues. That is, the ad-blocker sells “prominence” to some advertisers/content providers, and blocks the ads of the non-prominent, non-paying content providers.

Krämer & Wiewiorra (2017) explicitly consider this scenario of “whitelisting ads” and compare its welfare consequences to the case when either there is no ad-blocker, or when the ad-blocker is non-discriminatory in the sense that it blocks all advertisements without exception. They find that consumer surplus and total welfare is likely to be lower in the case of whitelisting than in the case of perfect blocking, and also lower as in the case without ad-blocking. Thus, here, a non-discrimination rule, which would prevent ad-blocking technology providers from selling exemptions from its filter list, would indeed likely be welfare improving. However, given the limited amount of research on this issue, one has yet to be cautious to draw strong policy conclusions from this.

4. Discussion: Impact of a non-discrimination rule

Having summarised the key results of the economic literature on platforms' incentives to "prioritise" independent or integrated content providers, and the effects on the individual stakeholders and total welfare, we turn to the original policy question on whether non-discrimination rules are warranted. First, we wish to highlight and acknowledge that a general non-discrimination principle, which would demand that online platforms present all of their content in a non-discriminatory way, is neither possible nor useful (see also Renda 2015). Instead, it is often the very purpose of platforms to organise and present the available content or content providers (i.e., one market side) in an *objectively* justifiable manner (i.e., on objective content characteristics such as quality) such that they are most useful to consumers (i.e., the other market side). If the platform has personalised data about its users, this can also result in a personalised presentation of content for each individual user. There is no per se policy concern associated with this practice. However, this makes it generally very difficult to assess whether a platform engages in non-objectively justifiable discrimination (biased intermediation), which could be a policy concern.

In this report, we have focused on "sponsored prominence" (e.g., sponsored search results) as a particular discriminatory conduct that is generally readily observable by policy makers and which may interfere with the "organic prominence" that is based on objective criteria. "Sponsored prominence" means that platforms may choose to grant selected content a more prominent presentation on their platform and that this selection is to some degree *independent of the objective characteristics* of the content. In other words, some content may be featured more than other content, just because it paid the platform for this prominence, or because it is the platform's own content. Such discrimination of content is then not necessarily in the best interest of the platform's users and can have significant ramifications for the economic success of the content providers.

Based on the insights of the economic literature presented in the previous chapter, we will discuss next whether the ex-ante application of non-discrimination obligations that would prohibit "sponsored prominence" in the context of internet platforms is warranted.

4.1. Theory of harm: Is an ex-ante non-discrimination obligation justified?

Both ex-post competition law enforcement, as well as any ex-ante regulatory intervention, must be founded on an explicit theory of harm. That is, a clear understanding on how the considered conduct can potentially prevent, restrict or distort competition, and thus be detrimental to consumer surplus or total welfare. Therefore, a theory of harm needs to specify who actually suffers from a considered conduct and whether those negative effects outweigh any countervailing positive effects. Whether a theory of harm constitutes an abuse that warrants

antitrust or regulatory intervention also includes a policy decision on what should be the primary goal⁴² and who should be protected against harmful actions (see, e.g., Farrel & Katz, 2006, for a discussion of the relevant welfare standard in antitrust).

In the context of online platforms' practices to discriminate between content providers with respect to the prominence that they are granted on the platform, three main concerns (theories of harm) have been raised. First and foremost, concerns have been raised about the possible distortion of a level playing field for competing content providers, putting those content providers that are placed more prominently at an advantage. Second, there is a concern that this discrimination on the content provider side may leave consumers of the platform worse off, because it factually limits their choice set (less prominent content providers are simply not considered) and because consumers may be directed to rather high priced or less fitting offers. Third, it has been feared that content quality and content variety in platform markets may deteriorate over time, because providers that do not receive priority may be disadvantaged and thus exit the market in the long run, especially if they compete with vertically integrated content providers of the platform.

As described in Section 3, the economic literature provides a more nuanced picture as to whether these concerns are substantiated or not; and whether a non-discrimination obligation that would prevent online platforms from granting specific content providers prominence is justified.

It has been seen that in a competitive environment where the content providers compete in prices (but are otherwise offering similar products or services), discrimination with respect to prominence can indeed have negative effects on consumer and total surplus, because consumers are likely to be misguided and pay higher prices. In addition, in aggregate, content providers are likely to be worse off, because the platform is likely to be able to expropriate a large portion of their surplus.

However, the welfare conclusions are quite different when the competitive environment is such that content providers compete in quality (and not in prices). Then, selling prominence is likely to facilitate consumers search and will likely increase total welfare. Moreover, if content providers invest in quality, the prominent ranking of a content provider induces the prioritised provider to undertake higher investments than under non-discrimination. This has a positive effect on consumer surplus and total welfare and possibly outweighs the decreased investments of low-ranked content providers.

Whereas economic analyses support the reasoning that platforms likely have an incentive to prioritise vertically integrated content providers, there is no clear-cut evidence that giving prominence to the platform's own services will ultimately hurt consumers or decrease social welfare. The static welfare effects that have been identified in the previous subsection in the

⁴² For example, protection of consumers, or protection of competition between content providers. As detailed in Section 3, both goals can be in conflict from a static welfare perspective.

context of selling prominence to independent content providers, generally also apply in the context of granting prominence to vertically integrated content providers. However, with vertically integrated content providers, the negative effects in the case of conflicting payoffs may be magnified due to additional strategic considerations. In particular, concerns about foreclosure appear to be most warranted if the integrated content provider and its rivals are similar in quality. Still, from a static welfare perspective, the prioritisation of integrated content can likely be justified ex-post, because it incentivises the integrated provider to undertake higher investments.

In any case, prominence is likely to amplify the difference (in profits and/or quality) between prominent and non-prominent firms. Moreover, it should be highlighted once more that these results are derived from a rather short-term (static) perspective, and do not consider the impact on competitive dynamics in the long run, such as market entry and exit of content providers.

From the static perspective, the welfare implications of different policy interventions can then be differentiated along the type of competitive environment (as proposed by De Cornière & Taylor, 2016). First, in a competitive environment where content providers compete in prices (i.e., firms' and consumers' payoffs are conflicting), a *non-discrimination rule* (e.g., where content providers are ranked randomly) can indeed increase consumer welfare. However, the same rule is harmful when content providers compete in quality (payoffs are congruent). This is because in the latter case, the platform would be forced to rank quality-inferior firms in the top-position, although, under a sponsored ranking, this would not happen. In other words, discrimination in this case does not induce any harm on consumers in the short-run. In contrast, in the former case with conflicting payoffs, a non-discrimination obligation could protect consumers from harm through higher prices, and protect content providers from a possible prisoner's dilemma situation under a sponsored ranking.

Thus, in this specific case, mandated non-discrimination could improve consumer welfare as well as total welfare. However, in the realistic case when content providers compete in prices *and* quality, welfare effects of a sponsored ranking are ambiguous, but the literature indicates that market outcomes would rather resemble the congruent payoff scenario. In consequence, there would be no objective harm from a static perspective and a non-discrimination rule would rather be detrimental to consumers and total welfare. Thus, generally, the effect of a non-discrimination rule on (short term) welfare is ambiguous and potentially harmful.

Second, whereas the economic literature focusses on maximisation of the available total surplus, some findings point to potential issues that could harm competition and thus consumer surplus in the long run. In other words, it is not only the sum of surplus that matters, but also the distribution of surplus and the long-term effects on competitors and market entry and exit. As prominence magnifies the differences between content providers (i.e., high-ranked providers make higher profits and improve their quality, whereas the reverse is true for low-ranked providers) the number of independent content providers in platform markets is expected to continuously decrease. In turn, this may then raise concerns about (the lack of) competition in

those markets. A non-discrimination rule could then be used to reduce the variance in content providers' prices and qualities, and profits. In other words, content providers would become more similar again. This may not be optimal from a static perspective, but may be seen as beneficial from a dynamic perspective, because it could maintain competition in the long run and pre-empt market foreclosure or exit.

Third, instead of a non-discrimination obligation, the disclosure of a platform's bias through *voluntary or obligatory transparency rules* could represent a less severe policy instrument. Along the same lines, this can be helpful when content providers compete in prices, but is pointless when firms compete in quality. In this latter case, the platform will rank the content providers already according to their qualities and thus, there is de facto no bias in the ranking.

In summary, from a static efficiency perspective, the economic findings do not support a general theory of harm with respect to the considered discriminatory practices that would warrant a wide ex-ante application of a non-discrimination rule. In a nutshell, this is because in many cases, giving prominence to some content providers can increase the total sum of surplus in the industry. On the contrary, the literature identifies specific cases, where total welfare may decrease due to discrimination and thus a case-specific application of a non-discrimination obligation may be justified from a static point of view.

A notable exception, but still a topic under research, is the case of ad-blocking platforms, where discriminatory whitelisting in return for monetary compensation is found to deteriorate welfare. In this case, a non-discrimination obligation that would either prescribe a ban of all ad-blocking or would demand uniform blocking of all advertisements is found to increase consumer and total surplus.

From a dynamic perspective, a non-discrimination rule seems more appropriate, but currently there is a lack of economic research to thoroughly support this claim. Above and beyond our discussion above, in this context, it is worthwhile to note that discriminatory practices that weaken specific content providers or even lead to their foreclosure may be perceived as especially "unfair" to competitors, if those firms have previously contributed to the success of a platform in the first place, e.g., by providing complementary goods or by enabling the platform to increase its user base. This may, for instance, be the case if previously open APIs are not made publicly available anymore, or if the access to a platform becomes subject to more stringent terms and conditions for a particular set of firms (see, e.g., ProgrammableWeb, 2016). In particular, the market entry and the prioritisation of vertically integrated content providers raises concerns about competitive dynamics beyond a particular platform market and the long-term evolution of competition along the internet value chain.

The analysis of vertical integration from a dynamic viewpoint will include additional considerations next to prominence and discrimination in favour of integrated content. Among others, the firms' access to data, the necessary scale of firms to effectively compete with other

integrated ecosystems, and coordination effects and systemic efficiencies (c.f., Stylianou, 2016) need to be taken into account. We will discuss some of those issues next.

4.2. Ex-ante vs. ex-post non-discrimination obligation

The lack of a generally applicable theory of harm with respect to consumer and total surplus in a static welfare analysis (together with legal uncertainties, see Section 2) cautions against the introduction of an ex-ante regulatory framework based on the notion of non-discrimination directed at internet platforms in general at this point in time. On the other hand, there are more specific settings where economic theory suggests that anti-competitive discriminatory conduct by platforms would harm consumers and social welfare. Moreover, the negative effect on (independent) content providers' quality and profits could harm competition and variety in the long run, thus possibly making consumers worse off from a dynamic perspective.

Whereas the economic and social costs inherent to regulation, and the still highly dynamic and innovative environment, may not justify the application of an ex-ante non-discrimination regime in light of the ambiguous findings, the latter concerns indicate that discrimination as a possible abuse by dominant platforms should still be considered a very relevant issue in competition law. In fact, current and recent high-profile antitrust cases highlight that European competition authorities view non-discrimination as a relevant benchmark and a viable remedy (cf. European Commission 2004, 2017c). The insights from economic literature, summarised above, point to the specific scenarios, when prioritisation or prominence of specific content providers is likely to inflict harm on competitors and consumers. This should thus guide authorities' empirical evaluation of concerns about anti-competitive practices on a case-by-case basis. Furthermore, an ex-post approach allows the tailoring possible non-discrimination remedies to the specific application context and the observed competitive dynamics in a specific platform market, that will play an important role in the assessment of harm.

However, ex-post enforcement of non-discrimination rules can only be effective if harmful actions can be quickly identified and sanctioned. This is of particular relevance in fast-moving internet markets, where competitive disadvantages can swiftly magnify to significant losses in market share, which, reinforced by network effects, may threaten the economic viability of a business altogether. In turn, effective and foreseeable prosecution of harmful anti-competitive practices is a necessary precondition in order to secure investments and stimulate entrepreneurial risk-taking by independent content providers. This is also recognised by the European Parliament (2017), which "stresses the need to take timely decisions in competition cases in light of the fast-moving pace of the digital sector" (Nr.68).

However, many stakeholders, in particular independent third parties that rely on platforms, have criticised competition law enforcement for being too slow and ineffective in these markets. A recent summary report of a workshop on B2B relationships in the online platforms environment organised by the European Commission (2016b) states that "courts, and

[alternative dispute resolution] bodies are not considered an effective and viable alternative by business users to resolve problems of their business relationships with online platforms” (p.5), mainly because of a lack of speed and the fear of retaliation against complainants. The long duration of competition law cases in internet platform markets can be attributed to the two following issues:

- a) First, traditional steps and analyses enshrined in the competition law process, such as the definition of the relevant market and the assessment of market dominance, have proven to be more complicated in their application to multi-sided businesses and data-driven markets (see, e.g., a critique of the Commission’s market definition in the Google Search case by Broos & Ramos, 2015). Whereas there is now a quickly growing strand of literature on the theoretical foundations of market delineation in two-sided markets (see, e.g., Alexandrov, Deltas & Spulber 2011; Filistrucchi, Geradin, van Damme & Affeldt, 2014), those concepts and theoretical insights have not (yet) noticeably accelerated the enforcement process in practice. Ultimately, this may require an entirely new methodological approach towards competition law enforcement (see, e.g., Kaplow, 2015), which is, however, beyond the scope of this report.
- b) Second, as data is often only available to the operator of the platform, it is inherently difficult for any external observer to empirically identify and substantiate a potential abuse of market power in these markets. In particular, public authorities often find it difficult to promptly assess whether alleged wrongdoings indeed constitute harmful abuses due to a lack of transparency and quickly changing market dynamics (cf. Monopolkommission, 2015). Moreover, if there are possible objective justifications for discriminatory conduct, the differentiation between pro-competitive and anti-competitive practices becomes even more complex. Finally, as independent third parties become more reliant on a platform and thus fear retaliation, some abuses may not be reported to authorities.

This latter issue suggests that ex-post competition law may require additional ex-ante safeguards to be effective in internet platform markets. In telecommunications infrastructure markets, competition authorities in the European Union can rely on market information collected by regulatory agencies, which has evidently accelerated competition law cases in this domain and also made potential abuses more transparent due to available data sources. In this vein, ex-ante transparency rules may address many of the perceived obstacles to effective enforcement. In fact, improved market surveillance may equip authorities with the ability to act ex officio based on better information and insight, thus strengthening competitive law as a coercive threat, which may prevent possibly abusive behaviour in the first place. Alternatively, new institutions and self-regulatory mechanisms may be considered to identify concerns of stakeholders early in the process and resolve them without the need for competition law. Dispute resolution bodies have been suggested as a possible means to resolve issues in B2B relationships (European Commission, 2017a).



Obviously, the introduction of ex-ante rules as well as establishing new institutions will necessarily increase transaction costs and bureaucracy for platform operators, thereby constraining entrepreneurial freedom and possibly innovation. Therefore, those negative effects have to be weighed against expected benefits due to more effective competition law enforcement. We will discuss the inherent trade-offs and alternative solutions in the context of current policy initiatives at the EU level in Section 5.

Over and beyond the incentives for prioritising content identified by the theoretical economic literature, qualitative empirical observations suggest that in practice, there are additional strategic motives that could lead to discriminatory conducts. In particular, the surveyed literature offers no obvious rationale for the now often-observed tendency of intermediaries to enter content markets on top of their platform and to vertically integrate over multiple layers of the internet value chain.

Eisenmann, Parker & van Alstyne (2011) suggest that platforms have an incentive to enter other (platform) markets if they serve mostly the same users, if bundle pricing promises additional profits through price discrimination, or if there are considerable economies of scope on the supply side. With respect to the first point, the well-known Chicago critique of a “Single Monopoly Theorem” applies if the platform is considered to be essential, i.e., there is no substitute available for the services that rely on the platform as an input good and those services cannot enter the platform market themselves (c.f., Whinston 1990). In those situations, according to economic theory, the platform should then be able to extract all profits from content providers through the monopoly price or a respective revenue share. In consequence, there should be no incentive for a platform to enter the complementary content market, because profits cannot be further increased. Interestingly, a conceivable explanation of why platforms still find it profitable to vertically integrate into content markets can be based on a platforms’ commitment to non-discriminatory pricing. If a platform commits to a uniform revenue share, which is, for example, frequently observed in the case of mobile app stores, content providers’ surplus cannot be fully appropriated by the platform in content markets that allow for excess profits relative to other content markets. Therefore, vertical integration may become a viable option for particular profitable content markets as a means to fully appropriate this surplus.

An additional rationale may stem from the increasing importance of access to user data as a critical factor for competition in internet markets. In general, it has been argued that online platforms already benefit from “economies of scope in data”, because platforms can monitor the interaction of their users with a multitude of content providers on their platform, which in turn allows them to better assess user data than any single content provider on the same platform (Martens, 2016). In addition, vertical integration and the expansion of an ecosystem’s boundaries allows online platforms to obtain more detailed user data and to track users across different services, thus securing access to heterogeneous data sources. On the other hand, access to users can be exploited to monetise data sources as it allows the displaying of targeted

advertising. Thus, presenting consumers with the option to stay within an integrated ecosystem may strengthen the competitiveness of a platform in a specific market. Prüfer & Schottmüller (2017) show that in the presence of “data-driven indirect network effects”, markets are likely to eventually tip in favour of a single firm and that firms’ incentive to leverage its market power to adjacent markets may initiate a *domino effect*, i.e., those markets then will also tip in favour of the dominant firm. This is the case if data gained on users in one market can be utilised to improve the quality of the service or content in the adjacent markets.

Moreover, vertically integrated platforms are in a position to engage in bundling of platform services and adjacent content markets. If those adjacent markets are two-sided as well (i.e., consumers value the other side) and if firms are constrained to set non-negative prices, Choi & Jeon (2016) find that “tying can generate a tipping toward the tying platform and such tipping is more likely as the two-sidedness of the tying market increases” (p.5), even if consumers have a higher valuation for the competing content provider. In contrast, if the tied market does not represent a two-sided market, i.e. not both market sides value the other side, as for instance in the case of consumers and advertising, then a platform’s incentive for tying decreases with the degree of two-sidedness in the tying market.

Stylianou (2016) suggests that vertical integration across multiple layers of the internet value chain or across complementary markets allow firms to reap systemic efficiencies. Those efficiencies mainly arise from the pervasive control over a complex system, which allows for a coordination of multiple distributed components. In this vein, platforms’ incentives for integration may also be driven by supply-side economies of scope (see also Eisenmann et al., 2011), which have been found to play a significant role in other industries, where vertical integration is prevalent (see, e.g., Kwoka, 2002, for an empirical analysis of economies of scope in the electricity industry).

In summary, there may be additional strategic considerations that are not yet captured by the surveyed economic studies on prominence and prioritisation in the platform context, but which may have an additional influence on platforms’ decisions and welfare effects. On the one hand, this favours an approach based on ex-post competition law, which allows for case-specific analyses that take into account those additional considerations. On the other hand, once these additional considerations are understood more clearly and empirical evidence becomes more widely available, they may strengthen the rationale for an ex-ante regulatory approach if they suggest that prioritisation, particularly in the case of vertical integration, is likely to hurt competitors and consumers. In any case, those additional considerations point to interdependencies between markets and value chain layers, that should be taken into account when assessing the competitive situation within a specific setting as well as the implications of possibly discriminatory conducts.

5. Conclusions and policy recommendations

5.1. Summary of findings

Discriminatory practices in the form of paid prominence and sponsored search can be found throughout the internet value chain, employed by platforms that play an important role and are likely to possess considerable market power. As identified in the case studies (Section 1.2), “prominence” may be granted in several different ways, including, e.g., preferential access to APIs or delisting of competing products on e-commerce platforms. The European Commission worries that such discriminatory practices could possibly be harmful to downstream competition. Therefore, the European Commission announced that more scrutiny will be given to platform-to-business trading practices and the concern that some platforms may engage in discriminatory behaviour. In particular, an intermediary may engage in discriminatory behaviour by favouring its own products or services or by discriminating between different third-party suppliers and sellers. More specifically, the “lack of transparency, e.g., in ranking or search results,” has been identified as a key issue in this context (European Commission, 2017a). In October 2017, the European Council underlined the necessity of increased transparency in platforms’ practices and uses.

Unjustified discriminatory practices are already prohibited and transparency obligations are imposed under several general EU rules, in particular: the competition rules, the internal market rules and the consumer protection rules; some semi horizontal rules such as the E-Commerce Directive; as well as some sector-specific rules applicable to some types of services offered by internet platforms. Some of those rules apply ex-post while others apply ex-ante.

The economic literature finds that discrimination in the form of paid prominence may sometimes be in the interest of consumers. In cases where content providers’ quality is pivotal, static efficiency is maximised if the platform can offer content providers paid prominence; if content providers differ mainly by price, welfare results may reverse. In any case, smaller or low-quality content providers are worse off if platforms can offer paid prominence. This gives rise to concerns regarding dynamic efficiency and long-term variety in those markets. Additional problems may arise if platform operators are vertically integrated with content providers. The extent to which such a bias can occur depends on the market power of the platform. In summary, from a static efficiency perspective, the economic findings do not support a general theory of harm with respect to the considered discriminatory practices that would warrant a wide ex-ante application of a non-discrimination rule. From a dynamic perspective, a non-discrimination rule seems more appropriate, but currently there is a lack of economic research to thoroughly support this claim.

Taken together, in our opinion there is currently not a sufficient basis for a general ex-ante non-discrimination obligation for online platforms. However, concerns with respect to SMEs and long-term effects may still warrant additional safeguards for the enforcement of the general

rules against unjustified discrimination. In addition, the existing policy framework should aim at making those general rules, such as competition law or consumer protection, more effective.

In the remainder of this section, we make several suggestions towards this end. First, we highlight preconditions that facilitate the effective enforcement of existing rules. Second, we stress the applicability of existing rules to online platforms and suggest that the Commission should provide clear guidance on the applicability of these rules with respect to discriminatory practices in order to increase legal certainty. Third, we propose and discuss the use of additional ex-ante transparency obligations for online platforms that can further facilitate the effective enforcement of existing rules.

5.2. Preconditions for an effective enforcement of the existing rules

5.2.1. Facilitating factors for public enforcement

(a) Stronger and better-informed institutions

General, as well as sector-specific, national agencies in charge of enforcing non-discrimination obligations against internet platforms should be strong and well informed. This entails that authorities need to be well staffed, in particular with engineers and data scientists understanding the characteristics and the functioning of online platforms. Moreover, they need to have the power to impose sanctions with sufficient deterrent effects. Although this may already be the case for competition agencies, this is, for instance, not yet the case for consumer protection agencies. Finally, they need to be well informed.

However, in practice, gathering both comprehensive historic and up-to-date market information and transaction data is often challenging. This implies that the exchange of information, even confidential, between authorities should be facilitated and, as we will suggest below, the important platforms could be subject to additional transparency obligations to the benefit of the authorities.

(b) Quicker procedures

In general, the digital economy evolves very quickly and hence procedures against unjustified discrimination should also be resolved quickly. Stronger and better-informed enforcement agencies, as described above, should contribute to speed up the procedures. Two additional measures that can possibly lead to quicker procedures are worth discussing in this context.

First, interim measures could also be used more often when legally feasible as suggested by the Monopolkommission (2015). In EU competition law, interim measures can be imposed when there is (i) *prima facie* finding of infringement and (ii) an urgency due to the risk of serious and irreparable damage to competition.⁴³ While the first condition can be difficult to meet in the

⁴³ Art. 8 Regulation 1/2003.

digital sector because of the novelty of many cases, the second condition should be easily met because of the rapid pace of digital innovation. In practice, the Commission did not rely on interim measures since the enactment of Regulation 1/2003 while some national competition authorities, such as the French Competition Council, are more inclined to rely on interim measures than others. This difference can partly be explained by different legal requirements, but also by different preferences.

Second, it has been suggested that having a procedure with clear deadlines, as for EU mergers and state aid control, or in antitrust at the national level (in some countries, e.g. Spain), would speed up the enforcement. This could be implemented, e.g., through modification of the corresponding legal instruments at the EU level (Regulation 1/2003), but also by soft-law, for instance, through best practices in which the competition authorities would agree to specific deadlines. However, adoption of such deadlines may lead to adverse selection, whereby only the less complex cases, or cases with established legal precedent, are more likely to be taken on by the competition authority.⁴⁴ Instead, it may be more valuable to focus on the important or innovative cases that would establish new legal precedent. In addition, strict deadlines would imply, by definition, a lack of time in preparation of the decisions in complex competition cases. In consequence, this may have a detrimental effect on enforcement, considering that the issues at hand are usually quite complex and lack legal precedent.

(c) Better coordination and harmonisation

At the national level, different authorities are in charge of enforcing the different general and, if any, sector-specific non-discrimination obligations imposed on internet platforms. Those authorities are also in charge of imposing transparency obligations which may help to detect an illegal discrimination.

On the one hand, it is important that those authorities cooperate between each other to take effective and consistent decisions. EU law may impose an efficient cooperation between national agencies but should leave the form of the cooperation to the Member States according to their national circumstances.

On the other hand, as digital platforms services are often provided on an EU or even global basis and evolve quickly, it is also crucial that enforcement agencies cooperate closely and swiftly with each other and with the European Commission. In this context, it is also important that the rules applicable to online platforms are, to a large extent, harmonised across the Member States and that the divergences between national rules are reduced.

⁴⁴ However, we emphasise that if the Commission is not in the position to select cases (in merger or state aid control), and hence, there is no risk of adverse selection.

5.2.2. Facilitating factors for private enforcement

Centralised and public enforcement is inevitably limited as public financing and public information are constrained. It should be complemented by an active decentralised and private enforcement that regulation may facilitate.

First, the possibility to get private damages in case of unjustified discrimination should be facilitated. In 2014, a directive has harmonised and eased conditions to get private damages for competition law infringements.⁴⁵ Similar initiatives may be taken for other sources of law prohibiting unjustified discrimination.

Second, the establishment of private voluntary resolution bodies arbitrating discrimination disputes should be encouraged. If such self-regulation proved to be ineffective, the establishment of public compulsory dispute resolution, preferably within existing general agencies, should then be explored.

5.3. Clarify the application of existing rules to online platforms

The general rules against unjustified discrimination are principles-based. They have the advantage of being flexible and adaptable to fast, and often unpredictable, technology and market evolutions. However, their application to specific cases may be unclear, especially for novel issues, thereby creating legal uncertainty. To alleviate this drawback, enforcement agencies should clarify the application of regulatory principles to specific sectors and/or specific practices by adopting guidance or by settling new cases with the main stakeholders in order to set up precedents.

(a) Competition law

One important source of the general rules is the competition law. In cooperation with the national competition authorities within the European Competition Network, the Commission may, with guidance or individual cases, clarify how the antitrust criteria apply to online platforms' discriminatory behaviours.

First, the determination of *market power* should take into account the main characteristics of the online platforms, such as the importance of direct and indirect network effects, the decreasing reliance on monetary payment and the increasing use of data as a means of exchange to get services, the possible steep experience curve enjoyed by self-learning algorithms, the relationships between the different markets often of multi-sided nature, the extensive multi-homing of customers and the rate of innovation which is quick and often unpredictable and disruptive.

⁴⁵ Directive 2014/104 of the European Parliament and of the Council of 26 November 2014 on certain rules governing actions for damages under national law for infringements of the competition law provisions of the Member States and of the European Union, O.J. [2014] L 349/1.

Second, the conditions under which an external or an internal discrimination will be considered as *anti-competitive* should be clarified. With regard to discrimination having anti-competitive exclusionary effects, it should be clarified whether the condemnation of such practices requires the existence of an essential facility or not. Moreover, it should be clarified under which conditions the change of existing supply arrangements is raising more anti-competitive concerns than the *de novo* establishment of those arrangements because of the specific investment made by the clients of the dominant platforms or the role played by the client in the development of the dominant platform.

(b) Consumer protection

Another important source of general rules is consumer protection. Here again, the Commission, in cooperation with national consumer protection authorities, should adopt guidance. This is what the Commission did in 2016 when updating the Unfair Commercial Practices Directive Guidance to the evolution of the practices in the online sector⁴⁶ or what the Commission may do regarding the unfair commercial terms directive.⁴⁷ For new issues, consumer protection agencies may also rely on *soft enforcement*, i.e., not immediately opening a formal case where an infringement of consumer protection is detected in an area with legal uncertainty, because of the novelty of the practice or context. This is what the Commission and several national consumer agencies have been doing recently regarding certain practices of certain social networks in the EU⁴⁸ and, in a previous case, regarding app stores and in-app purchases.⁴⁹

5.4. Additional transparency obligations to improve the effectiveness of general rules

In order to improve the effectiveness of the enforcement of the rules and make the procedures quicker, the imposition of a new proportionate obligation of transparency by the online platforms to the authorities may need to be explored. At first, it needs to be clarified who should be the addressee of the information that is made available through these transparency measures. In general, three addressees are feasible in the context of online platforms: (i) public authorities, (ii) third-party business partners, (iii) consumers. In the following, we suggest that, in a first step, it should suffice to provide additional information to public authorities only. This would allow that information to be kept confidential, while keeping it available for legal enforcement.

As this new obligation may be costly for the regulated platforms (in terms of information to be given) as well as for the enforcement agencies (in terms of information to be processed), it is of the utmost importance that the objective and the scope of this obligation are strictly

⁴⁶ See section 5.2 of the Guidance on the implementation/application of directive 2005/29 on unfair commercial practices, SWD(2016) 163.

⁴⁷ Commission Fitness Check Report on consumer acquis, SWD(2017) 209.

⁴⁸ Commission Press Release of 17 March 2017, IP/17/631.

⁴⁹ http://europa.eu/rapid/press-release_IP-14-847_en.htm



circumscribed in accordance with the principle of proportionality. In the following, several suggestions are made as to how such an ex-ante transparency measure could be implemented in practice.

First, in order to limit the transaction costs of regulation and to avoid additional burdens for new entrepreneurial activity, a clear threshold on the applicability of additional transparency obligations should be defined. Due to the challenges in quickly assessing market power in digital markets, and in line with the previously discussed concept of “importance” (see Section 1), transparency obligations should be limited to the most “important” online platforms. In particular, a threshold that is based on revenues, or alternatively, a threshold that is based on the number of active customers, should be considered as a fruitful starting point for a further discussion.

Second, the information to be given should be determined on the basis of the possible competitive problems identified in the literature and confirmed by the practice as explained in the sections above. Specifically, information on how the sponsored ranking results are determined (e.g., bids submitted by the content providers, the platforms’ quality assessment of the content providers, click-through rates, etc.) could be collected. As this data collection should be limited to a few important online intermediaries (see above), it is feasible to clarify the precise nature of data to be shared in a dialogue between the public agency and the respective stakeholders.

Third, data collection should be done on a continuous basis, as long as the threshold criteria (see above) are met. This could establish an empirical basis for quicker and better assessment and possibly enforcement of competition issues, by having both historic and up-to-date information readily available. Similarly, competition authorities in the European Union can rely on market information collected by regulatory agencies, which has evidently accelerated competition law cases in this domain and also made potential abuses more transparent due to available data sources. It should be highlighted, however, that this does not necessarily imply that the collected data actually needs to be monitored and evaluated on a continuous basis. That is, competition authorities would still rely on a formal complaint to review this data more closely, and would not act upon this information ex officio. Yet, the simple fact that such information is collected and readily available could act as a “coercive regulatory device”, which may prevent unjustified discriminatory actions in the first place and render more heavy-handed intervention unnecessary. Overall, continuous data collection is therefore considered to be a promising policy instrument to foster effective competition between content providers in the long run, i.e., to warrant dynamic efficiency.

Fourth, it remains to be discussed which public authority should be responsible for such data collection. Generally, national regulatory authorities already have expertise in the collection of market- and operator-specific information on a continuous basis. However, as the online platforms that may be subject to the herein proposed transparency obligations are likely to span across different sectors, a “horizontal” authority, specifically a competition authority, may be



better suited to take over this task. Consequently, it is suggested that the information should be given to the competition authority, as the aim is to detect more easily and sanction more quickly anti-competitive discrimination, and ideally to the Commission as most of the (legal or illegal) practices of the online platforms apply for the whole EU or at least have important cross-borders dimension.

Finally, the establishment of such a new obligation should first be tried with self- or co-regulation. If that proves to be ineffective, however, the obligation could be foreseen more formally in codified law. Specifically, Article 5 of the E-Commerce Directive, which already deals with transparency requirements, could be amended accordingly.



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