Competition law enforcement and regulation for digital ecosystems: Understanding the issues, facing the challenges and moving forward

Article  | Concurrences N° 3-2021  | pp. 38-62

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ABSTRACT

Competition authorities are under severe political pressure to intervene quickly against the digital behemoth for a variety of reasons. Various expert reports have suggested that traditional antitrust or competition law enforcement and merger control are inadequate or insufficient to deal with competition issues in the digital sector. This paper explores the competition issues raised by digital platforms and ecosystems, the extent to which these issues can be dealt with by competition law and whether regulation could be a complement or a substitute to competition law enforcement. The paper is divided into three sections. In the first section, we look at the economics of digital platforms and ecosystems and their business models. In the second part, we analyze the main challenges faced by competition authorities when they apply their traditional analytical tools to antitrust or merger control cases in the digital sector. The third part compares the EU Digital Markets Act proposal to regulate gatekeeper platforms and the UK proposal to establish an enforceable code of conduct to govern the behavior of platforms funded by digital advertising that are designated as having strategic market status (SMS). We conclude with a research agenda to help competition authorities avoid the risks of inadvertently giving in to the political pressure of economic populism or ideology or issuing misguided decisions which may be ineffective or, even worse, restrict competition or innovation in the digital sector.

1. Competition authorities are under severe political pressure to intervene quickly against the digital behemoth for a variety of reasons. The extraordinary financial success of a few companies, some of which have benefited from the Covid-19 crisis, combined with the idea that they have been highly successful at optimizing their tax status and avoiding paying taxes, has cemented a political consensus that they should be scrutinized and that their power should be curtailed.

2. The inability of antitrust authorities to control the merger wave initiated by the GAFA in the US and the fact that in Europe a limited number of cases had a tangible effect on their behavior has meant that a number of critics argue that direct regulation of the GAFA would provide a better way to control them than ineffective competition law enforcement.: Due to the rapid pace of change in the digital sector and the idea that once entrenched, their market power may be exceedingly difficult to curb, competition authorities have felt the need to react quickly, possibly even before they fully grasp the intricacies of the digital sector.

3. As the digital sector is the newest frontier in competition law enforcement, a number of recent reports, including some commissioned by competition authorities, have analyzed the specificities of the digital sector and made suggestions on how to deal with competition issues in this sector.

4. For example, in March 2019 the “Competition policy for the digital era” report commissioned by Margrethe Vestager, EC competition commissioner, was made public. The report argued that the specific characteristics of platforms, digital ecosystems, and the data economy required that established concepts, doctrines and methodologies, as well as competition enforcement more generally, be adapted and refined. In particular, the report suggested that the time frame and standard of proof of the consumer welfare approach should be rethought to avoid under-enforcement. It also suggested that competition enforcement should protect...
competition for the market as well as competition in the market, that in some cases data access—and possibly data interoperability—may need to be imposed through regulation. It added that the acquisition of targets with a low turnover but a large and/or fast-growing user base and a high future market potential needed to be controlled and that injecting some “horizontal” elements into the analysis of “conglomerate” mergers may be necessary to control the creation of dominant “ecosystems” through mergers and acquisitions.

5. In May 2019, the Furman report (Report of the Digital Competition Expert Panel) was published in the UK. This report suggested that digital markets are subject to “tipping,” in which a winner will take most of the market, and that if concentration in digital markets can have benefits, it can also give rise to substantial costs, for example from lower innovation. It concluded that neither merger control nor antitrust enforcement is well designed for the intensive and ongoing work that needs to be done to facilitate competition and entry by making it easier for consumers to move and control their data, and for new digital businesses to interoperate with established platforms. It suggested that merger control should be more forward-looking and take better account of technological developments and that, with respect to antitrust, a greater use of interim measures to prevent damage to competition while a case is ongoing, as well as an adjustment of the appellate standard, was necessary for the digital sector.

6. In the US in early October 2020 the Antitrust Subcommittee of the US House of Representative’s Judiciary Committee released a staff report analyzing the challenges presented by the dominance of Apple, Amazon, Google, and Facebook and their business practices. The report proposes a series of radical remedies to restore competition in the digital economy, strengthen antitrust laws, and reinvigorate antitrust enforcement. The report recommends structural remedies such as the separation of digital platforms from commerce and discouraging mergers resulting in 30% or more market share in order to prevent the increase of concentration. The report also discourages acquisitions by dominant companies of direct competitor startups or startups operating in adjacent markets. Its regulatory recommendations suggest rules requiring non-discrimination, data portability, and interoperability. Setting the threshold for market dominance at 30% share, the recommendations further call for a European-style offense of abuse of dominance. Additionally, the report calls for special rules for dominant companies including nondiscriminatory access to their essential facilities and a prohibition on tying products and services together.

7. Although they have very different perspectives these EU, UK and US reports agree on one point: all three consider that, as practiced today by competition authorities, antitrust or competition law enforcement and merger control are inadequate or insufficient to deal with competition issues in the digital sector. If the US report proposes to abandon the consumer welfare standard altogether, a proposal which has little chance of being adopted, the other two reports suggest that the difficulty is not with the standard applied by competition authorities but with the tools that they use for their analysis; that those tools need to be adapted or new tools need to be adopted.

I. The economics of platforms and ecosystems

8. Platforms existed before the emergence of the digital sectors. For example, a number of competition authorities have dealt in the past with payment platform and media platform (press and TV) cases and were confronted with the question of how such platforms and their strategies should be analyzed under competition law.

9. For a number of years, these cases were a source of great confusion among competition authorities with respect to three issues:

- how to deal with market definition (one market, several markets, interdependent markets) and, in particular, should markets be defined differently depending on whether the platform was a transaction platform or a non-transaction platform;
- to what extent and how should the interdependency between the sides of the platforms be taken into consideration; and
- how to deal with the fact that if several markets are defined, the efficiency benefits of the anticompetitive practice might be observable on a different market than the market where competition was restricted.

10. With the development of the digital economy the number of platforms has greatly increased as digital platforms do not require the creation of a physical infrastructure; the nature of platforms has evolved with the increasing importance of consumption platforms and the business model of platforms has evolved with platforms becoming the center of gravity of complex and dynamically evolving multimeyrket ecosystems.

11. Thus, the enforcement of competition among digital platforms raises new and complex issues. As Crémer, de Montjoie and Schweitzer observe: “Because of the innovative and dynamic nature of the digital world, and because its economics are not yet completely understood, it is extremely difficult to estimate consumer welfare effects of specific practices.”

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1. Pipeline firms and platforms

12. In order to assess if and how competition analysis must be adapted to deal with digital markets it is useful to start with a short presentation of the differences between traditional “pipeline” firms and digital platforms and of their respective strategic environments.

13. Following Van Alstyne, Parker, and Choudary, it is important to note at the outset that the traditional (or “pipeline”) firm’s business model rests on the combination of the control of a valuable resource (a mine, a piece of real estate, an intellectual property, etc.), the organization by the firm of an optimized value chain (through the management of resources, the acquisition of the necessary inputs at the lowest possible cost, the transformation of the inputs and resources into the particular goods and services offered by the firm) based on a (mostly stable) production technology and, finally, the sale of the goods for a price which allows the firm to make a profit if the value for consumers of the product or service is higher than their optimized cost of production.

14. Economies of scale are often prevalent in production processes and whenever they are important, they give a growth incentive to pipeline firms to lower their average production cost by spreading their fixed costs on a larger number of units sold. In this sense, one can say that the size of pipeline firms is driven by supply-side economies of scale.

15. Pipeline firms face five possible threats which have been described by Michael Porter: the threat of new entrants, the threat of substitute products or services, the threat of the selling power of suppliers of inputs, the threat of the buying power of buyers and, finally, the intensity of the rivalry with competitors. Each one of these threats can give rise to strategic decisions by the firm to lower the intensity of the threat or eliminate it.

16. Some of these reactions (such as, for example, innovation in the production process resulting in the lowering of the cost of production of the good or service or in the creation of differentiated and more desirable goods or services) are socially beneficial while some other such as the artificial creation of barriers to entry to prevent competitors from gaining market share or even entering as the artificial creation of barriers to entry to prevent or allow suppliers or advertisers to reach these users (for example, Google); and

18. The most important characteristic of digital consumption platforms is that, unlike pipeline firms, they do not create value only for consumers.

19. They provide a framework allowing a high value of interaction between different types of economic actors (users, advertisers, and/or app developers, for example). Such a framework rests on the provision of an attractive service (or set of complementary services) the value of which increases for each user with the number of complementary services, with the number of users on its side of the platform and with the number of users on the other side(s) of the platform.

20. As Zhu and Iansiti stated: “Ultimately, in a digital network business, the employees don’t deliver the product or service—they just design and oversee an automated, algorithm-driven operation. Lasting competitive advantage hinges more on the interplay between the platform and the network it orchestrates and less on internal, firm-level factors. In other words, in the digitally connected economy the long-term success of a product or service depends heavily on the health, defensibility, and dominance of the ecosystem in which it operates.”

3. Building a user base

21. To develop a platform successfully, an operator needs, first, to rapidly scale up its user base. The acquisition of a large set of participants (users, businesses, app developers, etc.) serves two purposes for platforms.

22. First, increasing the number of users contributes to increasing the direct and/or indirect network effects which may make the platform attractive and successful. As the number of users increases, the platform becomes more attractive to potential users if there are direct network effects, but also to businesses or app developers if there are indirect network effects, and the more businesses and ad developers are attracted to the platform, the more the platforms will become attractive to users. This is the familiar feedback loop that allows platforms to become more successful as they grow. For example, Instagram, which was launched in 2010, on one side allows users
to build relationships through visual storytelling, on a second side, businesses to advertise their brands and products to its 1 billion users and, on a third side, influencers to build a following which can be resold to businesses ad campaigns to promote their brands. The more users there are on Instagram, the higher is the value of the service for each user since they can exchange with a larger pool of users. The more users there are on Instagram, the higher the value of Instagram for advertisers. The more advertisers there are on Instagram, the higher the value of the network for influencers since the resale price of their following increases with the value of the platform to advertisers.

23. Second, acquiring a large set of users allows platforms to train artificial intelligence algorithms on very large (and, if they are growing, increasingly large) sets of user data to personalize their offerings, which increases the relevance of the services for the participants and therefore the value of the platform to them. This creates something akin to a learning-by-doing effect.

24. For example, as mentioned by Lang, Lechner, Wurzer, and Dexheimer Netflix has the highest number of paying users in the world among all subscription-based streaming services. It therefore also has the largest database on the activity of streaming service users. Netflix is able to use artificial intelligence programs on this large database to make recommendations to its users and to monitor their reactions to its recommendations. Thus, through its system of recommendation Netflix can generate better decisions about programming, content development and subscriber preferences than its competitors, HBO or Hulu.

25. Another example of a platform relying on network effects (enhanced by the platform’s strategy) is provided by Zhu and Iansiti: “In the beginning, Amazon’s review systems generated same-side effects: As the number of product reviews on the site increased, users became more likely to visit Amazon to read the reviews as well as write them. Later, Amazon’s marketplace, which allows third parties to sell products to Amazon users, generated cross-side network effects, in which buyers and third-party sellers attracted each other. Meanwhile, Amazon’s recommendation system, which suggests products on the basis of past purchase behavior, amplified the impact of the company’s scale by continually learning about consumers’ preferences. The more consumers used the site, the more accurate the recommendations Amazon could provide them. While not usually recognized as a network effect per se, learning effects operate a lot like same-side effects and can increase barriers to entry.”

26. Thus there are both static and dynamic quality effects associated with the size of the user base of platforms.

27. The intrinsic quality and relevance of a platform’s innovative service may be such that the service offered by the platform meets success instantly. For example, the iOS photo-sharing application Instagram, which was launched in October 2010 (a few months after the iPhone 4, which included an improved camera), acquired 25,000 users the day it was launched, had been downloaded 100,000 times during the first week of its existence and reached one million users in two months. By March 2012, the app’s user base had grown to approximately 27 million users. In April 2012, Instagram was released for Android phones and was downloaded more than one million times in less than one day.

28. Such successes are, however, few and far between, and platform operators must develop strategies to speed up the growth of their user bases.

29. One strategy available to platforms to grow their base when there are cross-side network effects is to subsidize users on one side of the platform (in general the consumers of the service or in some cases the providers of a service) by granting large discounts to users on this side in the hope of enticing participants on the other side(s) of the platform.

30. Hence the provision of “free” services (services delivered without the beneficiary of the service having to pay a sum of money to use the service) is one possible business strategy that can be (and is widely) used by platforms to grow their user base.

31. For example, when Alibaba launched in China in 1999, the e-commerce platform faced competition from incumbent players like eBay. In order to attract businesses to its platform, Alibaba decided not to charge a membership fee to Chinese merchants, and instead to make money by taking a percentage from sales, advertising, display marketing, and storefront services.

32. It is also sometimes necessary for platforms to go beyond the provision of “free services” and make large initial investments to acquire the exposure or the notoriety which will allow the network effects to develop.

33. Network effects can also act as a barrier to competition. However as Zhu and Iansiti remind us in comparing social media platforms (for which the network effects are very strong) and video game consoles (for which network effects are quite weak because players are more interested in having access to hit games than to a large number of games, which explains why in 2001 Microsoft’s new Xbox was able to threaten Sony’s PlayStation 2), their strengths can vary considerably.

34. They can also change over time. For example, as internet-based apps working across different operating systems became more prevalent, the very strong network effects of Windows (for which developers had previously written their apps when apps were based on the users’ computers) evaporated, allowing Android, Chrome and iOS operating systems to grow on PCs and tablets.
4. Provision of complementary services

35. In order to maximize the value of the global interaction between the different types of users of their platform, platform managers need to find sets of complementary services which exhibit network effects (or economies of scale in consumption) as well as increase the value of the interaction between the users and the parties on the other sides of the platform, which will increase the importance of the feedback loop.

36. Thus, for example, Google is an advertising-funded platform built around a superior quality search engine that benefits from direct externalities and learning effects thanks to the use of artificial intelligence algorithms to improve the quality and relevance of its search function. It also uses advanced technology, artificial intelligence and machine learning to offer a superior digital advertising service to its business users. Thus the quality of the Google search engine is due to the combination of the intrinsic high quality of the algorithms it uses compared to its competitors and to the large size of its user base which allows superior training for its artificial intelligence algorithms.

37. The algorithms that platforms develop to create the interaction necessary for their core service can often be adapted to provide other complementary services between the same parties. Platforms can thus both leverage their technology and their user base to enter adjacent markets.

38. For example, Uber started in 2010 as a ride-hailing platform but extended its services to prepared food delivery in 2015 and is considering expanding into grocery delivery service, car hire, self-driving cars, etc. The diversification of Uber in the prepared food delivery service paid off in 2020 when the Covid-19 epidemic meant that ride-hailing in North America went down by 82% while Eats orders were up by 89%.

39. Uber diversification into the food delivery service benefited, on the one hand, from the massive number of brand-loyal users of the Uber ride-hailing service and, on the other hand, from the fact that Uber was better equipped to invest in the prepared food delivery service than other delivery apps thanks to its huge past investment in research and development on optimal logistics and routing algorithms.

40. In turn, the large base of users of the Uber ride-hailing service and of its Eats food delivery service makes the acquisition of users for the grocery delivery service cheaper than what some of its competitors face. For example, Instacart, one of the largest competitors of Uber in grocery delivery service in North America, has to rely on partnerships with grocers to promote its delivery service.

41. Furthermore, the grocery delivery service fits well as a complement to the other services offered by Uber, thereby increasing the overall value of the Uber platform.

This addition will benefit its drivers by offering them more opportunities within Uber, making Uber more attractive as a platform overall. That could reduce driver acquisition expenses. Also, including free grocery deliveries in its Uber Pass and Eats Pass subscriptions could make customers more likely to sign up and remain loyal to Uber for its other services.

5. Closed and open architectures

42. As platforms add complementary services to their core offer, they may develop those new services internally or through complementors. They want to offer the right type, the right number and the right quality of complementary services.

43. Platforms can choose either an open or a closed architecture for their ecosystems, allowing more or less access to the resources of their platform.

44. To ensure service quality, platform security or to guard against congestion, a platform may choose to impose strict standards on its complementors and/or to limit their numbers.

45. Apple, for example, aims to keep a high standard of quality for its applications consistent with the high-quality standard of its devices. The Apple guidance to app developers, for example, states: “We review all apps and app updates submitted to the App Store in an effort to determine whether they are reliable, perform as expected, respect user privacy, and are free of objectionable content.”

Apple may reject applications for technical reasons such as the fact that the app contains explicit bugs or full-out system failures. Besides the previously mentioned technical reasons, Apple may also reject an app for a content-related reason, if the application is a duplicate of another application, if it provides a misleading description of itself, if it lacks valuable content, if it has a poor user interface, if it uses payment mechanisms other than in-app purchase to unlock features or functionality in the app or if it does not respect the very strict privacy policy of Apple.

46. In contrast, the approval process for Google Play is not as exacting as the Apple process and Google Play does contain some low-quality apps. Google Play is developer-friendly and has a vibrant community that supports all kinds of app developers, be they novice or professional. This partly results from the fact that Google Play is present on Android phones that are cheaper than Apple’s iPhones and sold to customers who are less quality-sensitive than the Apple customers.

47. A platform may decide to follow a more open approach if it seeks to encourage as many partners as possible in order to boost customer and service variety. An open architecture may also help the diffusion of innovation across the whole ecosystem.
48. Finally, the choice of an open or closed architecture may be dictated by the overall business model of the platform and whether it derives its revenues mostly from advertising (which requires a very large set of users) or from the sale of high-quality expensive terminals (in which case, the platform aims at fewer but better-off users ready to spend more on high-quality services and apps). Even though the App Store (which hosted about 2,200,000 applications on the iOS store in 2019) has fewer applications than Google Play (which hosts 3,800,000 applications on its play store), it generated sales of about $22.6 billion in 2019 whereas Google Play generated only $11.8 billion that same year partly due to the fact that users spend 1.9 times more time on the Apple store than on Google Play.

49. The desire of platforms that choose to have a closed architecture and reserve the right to exclude applications or to impose stringent constraints on the applications that they allow in their ecosystem may be viewed with suspicion by some competition authorities (see below).

6. Single homing and multihoming

50. One of the possible threats to the success of a platform is the fact that its users or complementors will simultaneously participate in other similar and competing platforms. The most obvious example of multihoming is in the ride-hailing industry. Many drivers are affiliated both to Uber and to Lyft and many users have downloaded both apps and shifted from one to the other. Multihoming in the ride-hailing business explains to a large extent the intensity of competition between platforms whether we consider the case of Lyft and Uber in the Western world or the bruising battle which took place in China between Uber and Didi (leading Uber to eventually leave the Chinese market). Likewise, a number of app developers create an iOS version and an Android version of their apps so that they can be present both on the Apple and on the Google platforms. Another example of multihoming is provided by hotel reservation platforms with hotels that can be listed on a number of competing hotel reservation platforms.

51. Multihoming on one side of a platform may not be as threatening to the profitability of the platform if users on the other side(s) of the platform single home. Indeed if on one side of a platform participants single home, then the platform participants on the other sides of the platform can interact with the single-homing group of participants only through the platform, which means that the platform can monetize its gatekeeper power with respect to its single home participants.

52. Multihoming on all sides of the platform makes it very difficult for a platform to profitably provide its core service because it creates direct alternative ways for the interaction between the participants to the platform. Furthermore attempts to reduce multihoming on one side of the platform (for example, by imposing an exclusivity clause on participants on this side of the platform) may backfire and increase multihoming on the other side(s) of the platform.

53. For example, if all the owners of accommodations listed on Airbnb had to sign an exclusivity agreement with the platform, it would mean that users seeking an accommodation on Airbnb would also have a strong incentive to look at the listings on Booking.com because they would be sure to find a different set of accommodations than the ones listed on Airbnb. These users would have less of an incentive to multihome if the listings on Airbnb and Booking.com were identical or largely overlapping. Thus, the problem of multihoming must be dealt with on all sides of the platform simultaneously.

54. The more frequent multihoming is, the lower the cost to the platform participants of switching from one platform to a competing one. For example, for users, it may be very costly to multihome between Google Play and Apple App Store because it requires using different terminals.

55. One of the ways for a platform to guard against the risks of multihoming or to reduce its impact is to incentivize platform participants to remain highly active on the platform. Increasing the quality or the variety of services that platform participants have access to as a function of their level of activity on the platform can be one way to achieve such a result. Offering financial incentives conditional on the user’s level of activity on the platform is another way. This is for example what Uber and Lyft do when they give bonuses for many different services to users who have achieved a certain number of trips. Using artificial intelligence to personalize offers of services and the messages addressed to users is yet another way to keep them engaged.

56. Finally, imposing exclusivity clauses on complementors or contractual provisions to the effect that the complementors will not offer their services simultaneously on another platform at a lower price are ways to discourage multihoming or the competitive impact of multihoming by business complementors. For example, in the video game sector, there is little multihoming on the user side, as to do so consumers would have to buy a multiplicity of expensive consoles to switch from one platform to another. But console makers, like Nintendo, also impose exclusivity on game publishers in order to increase the loyalty of their consumers and to avoid head-on competition with competing platforms.

7. Disintermediation

57. Disintermediation is what happens when, after a first contact on the platform, a user and a complementor decide to deal with each other directly rather than going through the platform. This bypassing of the platform can be serious a threat to the platform, particularly when the platform’s revenues come from a percentage of the transactions made on the platform or when the platform derives its revenue from the interaction between the users of the platform and its complementors. According
to Zhu and Iansiti, such disintermediation led to the demise of a platform called Homejoy (which went out of business in 2015, five years after its launch). On this platform, people needing house cleaning services were able to meet house cleaners. But once a client had found a good house cleaner, there was no incentive for the client to use the platform to continue their relationship. Simultaneously, once the cleaner had a sufficient stock of faithful customers, they had no incentive to continue using the platform. One of the strategies that a platform can use to prevent disintermediation is to combine its matching or transaction service with other services highly valued by users on one side of the platform or to find a way to prevent the interaction or the transaction from taking place outside of the platform.

8. Role and importance of data

58. One significant difference between pipeline firms and digital platforms and ecosystems is the role and importance of data in the business models of these latter entities.

59. Digital technologies may allow platforms and ecosystems, via digital interfaces, to gather real-time data on users and/or consumer choices, on the environment in which they operate and on the alternatives they consider, as well as data on the products or services consumed and the reaction of consumers or users to these products (through sensors), to store this data (on the cloud), and to analyze it (by using artificial intelligence algorithms).

60. The data can be collected in different ways. Some platforms (for example, Amazon) are able to observe the specific behavior of users while they are engaged in the different activities of the platform. A platform may also elicit information by asking users to log in or may establish partnerships with other services to access or exchange user information (for example Facebook and Instagram).

61. Digital technologies thus offer unparalleled possibilities for platforms with data access to develop insights on individual customers and help firms develop products or services that are customized to customer preferences. Access to data and use of data thus may become a strategic asset for digital firms to increase their value proposition.

62. Data collection and usage is thus becoming central to many digital platforms, some of which reach and connect hundreds of millions of users. This data can be used by the platforms to keep users engaged or to develop in adjacent markets (thanks to the exploitation of the data’s economies of scope) or to preempt competition (for example, by allowing the platform to monitor the success of the services offered by complementors on the platform) or to enhance the effectiveness of the digital advertising through which the ecosystems finance themselves. It can also be sold to third parties.

63. There are different issues associated with the role of data in the development of platforms and ecosystems which are worth keeping in mind. Some of these issues directly relate to the role of data in the competitive process between platforms and ecosystems. Other issues are indirectly related to competition issues.

64. First, access to data, data analytics and processing can help digital platforms better understand their customers, providing them with services and products better tailored to customer needs and better serve their advertisers by targeting their offers more precisely and by increasing the effectiveness of advertising. The algorithms which analyze the data are all the more effective when they are trained on a large amount of data. This, in turn, implies that ceteris paribus, a platform with more users and more data points will be better able to target its ads or its services to users than a platform with fewer users. This gives a qualitative advantage to large platforms over smaller platforms and can lead to markets tipping in favor of the largest platforms.

65. Second, access to data is seen by some analysts as a significant barrier to entry into digital markets, as newcomers are supposed to be incapable of surpassing currently successful firms that base their business model on the analysis of their collected data.

66. This view, however, is contested by others for two main reasons.

67. First, access to data gives a competitive advantage to a platform if it allows the platform to increase the quality of the services it offers to users, complementors and advertisers. But to consider that a large platform offering a quality of services superior to the quality offered by its smaller competitors is a barrier to entry to the small competitors is somewhat paradoxical. The large platform must have grown to acquire a lot of users and, presumably, it grew because it was able to offer either an innovative set of services or a better quality of services than what was available on the market. The fact that the platform, once it has gotten big, is able to improve even more the quality of its innovative service should not be regarded as anticompetitive since it clearly improves consumer welfare. As a general proposition, quality improvements should not be considered any more anticompetitive than (non-predatory) lower prices but rather seen as the positive result of competition for the market.

68. Second, some observers point to the fact that there are numerous examples of entrant platforms that have developed even though they did not originally have access to data. For example, Twitter and Instagram started with almost no data but became successful by attracting and keeping users thanks to the technical quality and ease of use of the services they offered. For the same reason, Facebook was able to overtake Myspace in social networking, and Google was able to overtake Yahoo.

69. In some instances. However the abundance of the data for a particular platform is not the result of its success in the provision of specific services but the result of a deliberate monopolization of the relevant data to prevent competition in the provision of the same services.

7 F. Zhu and M. Iansiti, see note 6
70. The most obvious example is that of connected cars. Once a manufacturer has produced a connected car, a large number of providers of digital services (whether insurance companies, maintenance and repair service providers, mapping services, music streaming services, news service, etc.) could potentially service this car. They are in competition with the car manufacturer for the provision of at least some of these services. However, the possibility for third parties to provide those services often depends on access in real time to information about the car. One of the ways car manufacturers, who are becoming “providers of services and mobility solutions” by drawing on, among other things, collected data, can limit the competition of third parties in the provision of these services is by making sure that these third parties do not get direct access to the information emanating from the connected cars. The European car manufacturers favor the extended car model that prevents independent service providers from getting direct access to the vehicles’ data and ensures that this data is retrieved solely by the manufacturer. The European Union is working on a regulation to ensure that independent service providers will get access to this data in a timely fashion and without discrimination.

71. Altogether, as Eliana Garcés and Daniel Fanaras state: “[W]hether data represents a barrier to entry in a particular market necessarily is a case specific analysis. This analysis must examine the relevance of the data for the quality and success of the service provided, the alternative sources of data and the alternative types of data that could be used to enhance a comparable service to the same effect, as well as consumer behavior in terms of switching and multi-homing.”

72. Third, a lively debate has developed over the question of privacy as users of digital services have become aware that digital service providers gathered, analyzed, exchanged and sometimes sold the data emanating from their digital activity.

73. Acquisti, Taylor and Wagman summarize the insights of the economic literature on privacy in the following way: “The review of the empirical work on privacy reveals various insights. First, it confirms the principal theme arising from the theoretical literature: empirical evidence exists both for scenarios in which the protection of privacy slows innovation or decreases economic growth and scenarios in which the opposite is the case. A second insight highlights consumers’ inability to make informed decisions about their privacy, due to their being often in a position of imperfect information regarding when their data is collected, with what purposes, and with what consequences. A third insight relates to heuristics that can profoundly influence privacy decision making, since privacy trade-offs are intertemporal in nature and often uncertain.”

74. Within this general framework, special attention has been devoted to the question of whether platforms were able to predict the willingness-to-pay of individual customers, and to engage in first-degree price discrimination. As Kerber notes, “the results of theoretical models show the complexity of the effects of more information about customers. In economic models with two periods, in which customers reveal with their buying decisions their willingness-to-pay in a first period, this information (buying history) can be used for personalised pricing in the second period. In such settings economists can show that it depends on a number of conditions whether this additional information leads to higher or lower profits of firms, and harms or even benefits consumers. If the customers are not aware that the firms use the buying history (‘naïve’ customers) and the firms have a monopoly, then this information increases profits by appropriating more (and theoretically all) consumer rents. However, under competitive conditions the same information can lead to more competition between firms for the different customers and therefore lower profits and lower prices. As a consequence, having more information about the customers is not always beneficial for the firms. These models also show that in competitive settings the existence of sophisticated customers, which take into account the future use of revealed information by firms, might lead to higher prices and less welfare due to the costs of the strategic non-revealing of information by these customers. Therefore, protecting this private information about willingness-to-pay might not always lead to a better outcome for consumers or increase social welfare.”

75. In spite of the fact that the economic literature on privacy issues does not establish a firm base from which to draw general conclusions on the welfare impact of privacy, some competition authorities have felt an urge to try to make privacy an antitrust issue.

76. One line of thoughts has been that large diversified platforms through the accumulation of large sets of data (thanks to their very large user base, to the great number of services that they offer and through which they can accumulate data, and thanks to the fact that they have accumulated data over time) have a competitive advantage over new platforms because of the economies of scale and the economies of scope associated with data collection as well as the self-perpetuating positive feedback loop that they facilitate. Another popular view has been that the fact that there were few platforms protecting the privacy of users was the consequence of a lack of competition between the main large ecosystems. The suggestions thus have been that excessive data collection (for example, the non-provision of enough transparency about data collection or insufficient privacy options) should be dealt with as abusive behavior by dominant firms or that interoperability and data portability were necessary to increase the level of competition between platforms. Data portability measures seek to reduce user switching costs and reduce the frictions associated with trying new services. It is argued that data portability stimulates competition by...

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making it easier for entrants to attract users and potentially alleviate barriers to entry associated with data access (in those markets for which individual-level data is valuable). Interoperability allows users of digital platforms to combine different complementary services from different providers.

9. Portability of data

77. As explained by the OECD, the effectiveness of portability and interoperability measures, their costs, and the risk of unintended consequences, will depend significantly on the conditions of a given market.12

78. Data portability could, in some cases, both facilitate entry by competitors and lower switching costs for consumers. However, there are cases where data portability will have little impact on competition (for example, if the portability of the data imposes a cost on users of the platform or if the provision of the services offered by the platform is highly concentrated and consumers have difficulties in finding a competing service to switch to). Similarly, if the economies of scale or scope from the data are strong or if the network effects are strong in the provision of the service, data portability may be insufficient to promote competition either because potential competitors will only get a limited amount of data since only a few users of the dominant service might be willing to port their data to the new service. In addition, if data portability obligations are imposed on all platforms, it may allow the dominant platform to induce users of the competing services to switch to its own service and reinforce its dominance.

79. At a practical level, data portability does not seem to have had a major effect on competition where it has been adopted or imposed. For example, even though Facebook already offers users the ability to obtain a copy of their information, the UK Competition and Markets Authority has observed Google’s social networking service was unable to compete with Facebook. Gabriel Nicholas and Michael Weinberg note: “Ported data is simultaneously insufficient to replicate Facebook and too tailored to Facebook to be useful for much else.” They conclude by stating “that regulators should not assume that competitors will be able to use ported data to build innovative products and services. An over-reliance on data portability may distract from more effective tools for addressing concerns with large platforms.”13

80. Similarly, it seems that in the retail banking sector, portability of data regarding bill payments did not lead to a significant increase in switching.

10. Interoperability

81. Interoperability is, in general terms, the ability of a system, product or service to communicate and function with other (technically different) systems, products or services. Whereas in telecommunications interoperability between systems is prevalent, it is much less developed in the digital world. Digital horizontal interoperability is the ability of competing products, services or platforms to communicate. Digital vertical interoperability refers to the ability of a product, service or platform to communicate with complementary products and services.

82. The extent and specific design of the interoperability of products, services, and platforms of a firm are influenced by technological decisions and strategic decision constructs (for example, the extent to which the platform allows interoperability and the extent to which the platform discloses the necessary interface information).

83. The lack of horizontal interoperability (for example, the impossibility of a messaging service to send messages to services run by other companies) may lock in consumers with a platform as they will lose the network effect (for example, the social interaction with their friends) if they switch to a different platform for the provision of a service. The lack of vertical interoperability can prevent users from combining different complementary products from different platforms or allow an ecosystem to prevent access to a platform by a third-party provider competing with a service offered by the core platform of the ecosystem. This may allow the core platform to leverage its strong position in some services to acquire a strong position on another service or to preserve its economic power for a service by preventing third-party providers of the same service from accessing the platform.

84. Interoperability measures could ensure that the incumbent platform and new platform communicate with one another, allowing the user to retain these network effects. This could help prevent a market from tipping into monopoly.

85. A key issue in this debate is the extent to which standards should be open, and agreed in a coordinated way across industry participants, or should be proprietary and chosen by a specific ecosystem firm. Proprietary standards and application programming interfaces (APIs) can potentially drive faster innovation and higher quality, but also create a greater risk of exclusion.14

86. However, as Wolfgang Kerber and Heike Schweitzer note: “Even among the proponents of greater interoperability, there is a broad consensus that (1) interoperability is not an aim in itself, (2) there are both benefits and costs of interoperability, and (3) due to the ensuing trade-offs,  

12 J. Mancini, Data portability, interoperability and digital platform competition, Background Note by the Secretariat, OECD Competition Committee, 9-11 June 2021, DAF/COMP(2021)5.
Interoperability can facilitate mass production allowing economies of scale and scope and higher network externalities. It can promote innovation and competition with regard to complementary products, allow greater choice for consumers, easier access to products and services, and more flexibility due to a lower degree of lock-in (both for consumers and firms). But interoperability can also result in a greater degree of homogeneity.

At the same time, the use of uniform standards and interfaces may limit the possibilities for firms to develop their own specific products and services because they have to comply with these standards and interoperability requirements. This may limit innovation and product differentiation to the detriment of consumers. Mandated interoperability can lead to less innovation and competition with regard to the standards and interfaces themselves, which may have the characteristics of natural monopolies (with all their negative consequences).

As the OECD notes, mandated interoperability may have negative effects. Indeed, "interoperability measures that mandate certain standards may also have the effect of entrenching certain technologies, business models or gate-keeper firms. (...) For instance, if a standard entrenches a given digital platform's features and protocols across a market, it may create stronger market power and thus greater incentive and ability to engage in anticompetitive leveraging strategies in related markets."

Finally, interoperability standards may have minimal impact on market competition if consumers exhibit a low tendency to switch or use third-party service providers as a result of inertia, status quo biases, default biases or even the "free effect" (wherein consumers favor zero-priced products even if much better quality alternatives are available at low prices).

Therefore, keeping in mind the possible gains and costs of interoperability, the difficult task for competition authorities is that of defining the optimal level of interoperability.

### 11. Business Models

Even though there are examples of non-digital sectors where competing firms have different business models (for example, free-to-air television versus pay-TV), such an occurrence is much more frequent in the digital sector than in the rest of the economy and the choice of a business model is a strategic decision by the core platform of the ecosystem which will shape the incentives of the ecosystem participants.

It is important to distinguish between the platforms that are mostly funded by:

- a subscription by final users (for example, Spotify premium),
- a fee imposed on business users (for example, on a transaction platform such as Amazon, third-party sellers pay a commission to Amazon for the sales they realize through the platform),
- a cut on the transactions between platform users (for example, on matchmaking platforms such as Uber or Deliveroo, the platform gets a cut of the transactions which take place),
- the sale of a product (for example, suppliers of video games sell consoles which allow their users to access their games),
- advertising (for example, Google or Facebook provide free services to their users and they fund these services (social networking, search, etc.)
- selling advertising or through the sale of the data to which they have access

With respect to platforms that deliver services through a terminal that users must acquire to access the services offered, there are two sub-models.

The first sub-model refers to the case where a terminal that gives access to third-party services is sold by the core platform at a high price. This is the model chosen by Apple. Apple's ecosystem is funded to a large extent through the sale of iPhones and a number of other devices as well as through commissions on third parties' sales. This model means that the platform can be financially independent from advertisers. The incentive in this case for the core platform is to offer high-quality services in coherence with the high quality and high price of the terminal.

The second sub-model refers to the case where the terminals are sold relatively cheaply and the revenues of the platform come from the services which are accessed through the terminals. The second sub-model is close to the video game business model (where consoles are sold relatively cheaply but games are relatively expensive) and raises familiar aftermarket competition issues.

But rather than being based on a terminal, a platform can be based on the free core services accessible on a large number of terminals sold by third parties. Again this category may have different sub-models.

The successful service of the core platform may be a paying service or a free service.

Google is an example of a platform that offers a large number of complementary services such as Google Search, Google Maps, etc., for free. In this case, the platform can rely on the advertising revenues it gets from selling advertising space on the pages of its free services,

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fees from complementors or a proportion of the transactions that take place on the platform (for example, on Google Play) or the sale of acquired data. The larger the share of advertising revenues for the platform or the ecosystem, the more easily accessible the services should be to users of the platform (so as to maximize the exposure of users to advertising and the value of the interactions). Therefore there is less incentive in such a case for the platform to limit the number of services offered on the platform (as long as there are no congestion problems) and to strictly control the quality of the apps.

99. Alternatively, a platform like Spotify can have a freemium service (with advertising) and a premium service (without advertising and with more functionalities) and hope to make its money from the large number of people deciding to move from the freemium service to the premium service.

100. A platform that is the interface between various sets of participants and offers a combination of intermediation services among various groups (users, advertisers, third-party providers of services, buyers of data) has many possible combinations of revenue streams to choose from because of the multi-sided nature of the platform. Its choice will depend on the quality of its services, the strengths and the direction of the network effects, the existence of multihoming or the prevalence of single homing on the various sides, the strength of the complementarity of the services it provides and the competitive threats it faces.

101. It is important to analyze the business model of a particular platform because the way it monetizes its services will shape its incentives. This will have implications both on the extent to which ecosystems will act in a direction consistent with consumer welfare and on the relationship between the platform and third-party providers of services on the platform.

102. The fact that platforms or ecosystems having different business models have different incentives is illustrated by the controversy with respect to privacy between Facebook, a social network financed through advertising revenues, and Apple, which does not rely on advertising. As mentioned earlier, Apple wants users to pay a premium for a safer, more private version of the internet while Facebook champions an “open” internet where services like Facebook are free for users and advertisers foot the bill. In order to make buying ads on Facebook as attractive as possible, Facebook needs to track the habits of the users of its services not only when they use its services but also when they use other services like Spotify and Amazon, on smartphones. Indeed, this kind of data tracking helps to better target finely tuned ads.

103. In April 2021, Apple announced that it planned to release highly anticipated iPhone software the next week with a privacy feature that would require apps to get explicit permission from users before tracking them across other apps. As a result, when opening many apps, owners of iPhones would see pop-up windows asking them whether to allow that tracking. Commenting on this innovation Apple stated: “We simply believe users should have the choice over the data that is being collected about them and how it’s used.” Facebook, which relies on digital advertising, is expected to gather less data about users as people decline that tracking. Facebook thus reacted to Apple’s announcement by arguing that such a move would hurt the digital advertising that helps fund free internet services. “Free, ad-supported services have been essential to the growth and vitality of the Internet, but Apple is trying to rewrite the rules in a way that benefits them and holds back everyone else,” a Facebook spokeswoman said.

104. As Cristina Caffarra et al. have argued, in order to apply competition law to digital ecosystems, it is necessary, first, to consider the business model of each ecosystem and to analyze the incentives resulting from such business models and, second, to consider the economies of scope in data from which they can benefit.

105. Roughly speaking, the intuition is that ecosystems that charge users for their services will have more incentive to deliver high-quality services to users since they can increase their revenues by charging more for those high-quality services. Thus self-preferencing by these platforms to foreclose competing third parties offering high-quality services is unlikely. Indeed, it would be against the interest of the platform.

106. Platforms that offer their services for free to users will benefit from their superior ability to provide digital goods which users value and their ability to prevent users from switching to other competing platforms (thus preserving the ability of the platform to monetize the users’ eyeballs). Such platforms will be less able to directly monetize the quality of their services and more intent to fund themselves through the exploitation of data provided by users. Such platforms may thus have an incentive to self-preference their services even if it degrades the quality of their offering or to hoard the data they get in order to limit competition.


18 Furthermore, Facebook in a December 2020 blog post called Apple’s privacy move anti-competitive, saying that Apple’s own personalized ad platform would be exempt from the new requirement giving users a choice of whether to opt in to tracking by third parties. On 22 October 2020, a coalition of French associations representing the online advertising ecosystem filed a complaint with the French Autorité de la concurrence against Apple arguing, among other things, that Apple holds itself to a lower standard than the one it wants to impose on third-party apps. In an interview with Reuters in February 2020, EU antitrust chief Margrethe Vestager has warned Apple that it must give equal treatment to all apps on its platform.

107. The fact that in the digital sphere the business models of ecosystems are varied and that, to a large extent, they determine the competitive strategies of ecosystems means that there cannot be a one-size-fits-all approach to competition law enforcement (or regulation) with respect to ecosystems. For example, platforms such as Amazon Web Services or Microsoft Azure do not have the ability to see what their users do, unlike platforms such as Facebook or Instagram. Thus some of the competition concerns associated with the potential exploitation of users’ data may not be relevant for all platforms.

108. Second, in the digital sector, competing platforms may have different business models and those business models may evolve over time.

109. Contrastingly, in many non-digital sectors, all of the competitors shared the same business model and this business model was relatively stable over time. For example, if we think of steelmaking, all the industry competitors have shared the same business model for decades. This means that it was fairly easy to assess competition on the merits in these non-digital industries and to have general ideas about the practices which might be problematic from a competition law enforcement standpoint.

110. In the digital sector, however, it is more frequently the case than in non-digital sectors that direct competitors may have different business models. For example, music streaming services may be offered both by ecosystems that charge a fee for users (charging, for example, for a premium version, such as Spotify) or by an ecosystem delivering free services (such as Napster did originally). Furthermore, digital ecosystems may compete with brick-and-mortar firms (for example, in the retail sector or Uber competing with taxis). This means that, in the same market, the potential competition concerns may be different from one competitor to the other.

111. Furthermore, over time the business model of an ecosystem may change and with this transformation, the nature of the potentially problematic competition issue may also change.

112. An interesting example of how a business model can evolve over time is provided by Google. When it was launched in 1998 (an era when incumbents like Yahoo, Excite, AltaVista, and others dominated the search engine market), Google’s initial plan included three different revenue streams: licensing its superior quality search results to Yahoo and AltaVista, customized search for businesses and advertising. Google initially expected that the faster the browser, the more searches, and more clicks that ecosystems are varied and that, to a large extent, determine the competitive strategies of ecosystems means that there cannot be a one-size-fits-all approach to competition law enforcement (or regulation) with respect to ecosystems. For example, platforms such as Amazon Web Services or Microsoft Azure do not have the ability to see what their users do, unlike platforms such as Facebook or Instagram. Thus some of the competition concerns associated with the potential exploitation of users’ data may not be relevant for all platforms.

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113. Instead of charging a predetermined price for ads on Google search, Google moved to a pay-per-click based, on the one hand, on a sophisticated and innovative system of auction which eliminated the winner’s curse (since the winning bidder only paid one cent more than the second-highest bid) and, on the other hand, included a quality score for ads which measured how relevant the ad was to the user’s quest. This sophisticated AdWords auction system adopted in 2002 vastly improved the effectiveness of the ads and made Google profitable. The AdSense program enabling advertisers to put display banners on third-party web pages thanks to a system matching keywords to web pages launched in 2004, following the acquisition by Google of Applied Semantics. In 2005 Google launched Google Analytics, a program allowing third parties to track and measure website activity and, in particular, how many users bought something via a Google ad. Initially, Google planned to charge $500 a month for the service and offer special discounts to AdWords customers. But Google decided to release Google Analytics for free because it felt that the more efficiently advertisers could track metrics, the more they were likely to use AdWords and AdSense. Then, in 2004, Google launched Gmail, which provided 500 times more storage space than Microsoft’s Hotmail, and launched the Chrome browser in September 2008, which, at the time of its launch, was 56 times faster than Internet Explorer. The idea behind Google Chrome was that the faster the browser, the more searches, and more searches meant more ads and money for Google.

114. In 2007 Apple’s iPhone hit the market. Google was an app partner for the original iPhone but was concerned that Apple would end up ruling the mobile space and that if Google Search were one day locked out of the iPhone, people would stop using Google Search on their desktop. Thus to protect Google search Google launched the Android Open Source Project (AOSP). Giving Android away for free would allow Google to find mobile outlets for its services.

115. By 2019, around 70% of Google’s revenues ($113.2 billion) came from advertisements on Google-owned properties, including Google Search, Gmail, Google Maps and YouTube; around 13% ($21.5 billion) of its revenues came from ads posted on Google Network Members’ properties; Google Cloud, including G Suite productivity tools, accounted for around 5% ($8.9 billion) of the revenue. Finally, revenue from hardware devices (Google Nest home products, Pixelbooks, Pixel phones, and other devices), Google Play —— (in-app purchases and digital content), YouTube Premium, YouTube TV subscriptions and other products and services accounted for the remaining 12% ($17 billion).

116. There is also speculation that the Apple ecosystem may change from one in which the monetization of the ecosystem largely rests on selling different types of hardware (iPhone or other devices such as tablets or computers) that are complementary to the services offered to an ecosystem in which the monetization will rest more importantly on the payment for services. Indeed, iPhone sales have begun to slow down, and Apple’s services business—which encompasses everything from the App Store to licensing deals—is being positioned as its next big frontier for revenue growth. Apple wants to sell people subscriptions for things they
can do on their phones.\textsuperscript{20} If this were to happen, the Apple incentives could shift from maintaining the quality and the complementarity of the services accessible through its ecosystem to engaging in strategies to foreclose access to competing services.

117. Similarly, there is speculation about the fact that the Amazon ecosystem (based on commissions paid by third parties selling through the Amazon platform and on the profit margin of Amazon when it acts as a seller) is migrating toward an ad-funded business model. The company’s advertising revenue has grown from almost nothing a few years ago to over $10 billion in late 2020. Revenue is expected to quadruple by 2023.\textsuperscript{21}

118. This means, first, that competition concerns may not necessarily be the same for all the competitors in the market. It also means that to assess what the competition concerns are, competition authorities need to consider the dynamics of the business models of the competing players.

119. Of course, the realization that the business models of competitors in a market can be heterogeneous and evolutive and that the specific features of business models need to be taken into consideration both to identify potential competition issues and to propose remedies implies that attempts to complement competition law enforcement with across-the-board \textit{ex ante} regulations may be problematic as some practices (such as, for example, data portability or interoperability) may be pro-competitive or pro-efficiency in certain ecosystem environments and be potentially anticompetitive or irrelevant in other ecosystem environments. We will come back to this issue in the section devoted to the EU proposal for a Digital Markets Act.

II. \textbf{Competition law enforcement with respect to digital platforms}

1. \textbf{Antitrust}

120. Most of the tools of analysis used in traditional competition law enforcement rest on strong hypotheses about the organization of economic activities.

121. First, hierarchical firms are supposed to operate on predefined markets for goods or services where they meet consumers.

\hspace{1cm} \textsuperscript{20} C. Gartenberg, How Apple Makes Billions of Dollars Selling Services, \textit{The Verge}, 20 March 2019.

\hspace{1cm} \textsuperscript{21} T. Smith, Amazon’s Growing Ad Business Could Forever Change Tech, \textit{Debugger}, 1 October 2020.

122. Second, those firms are considered to operate on markets where other firms are competing with them by offering substitutable products or services to those that they offer. Thus a market is the locus of competition.

123. Third, firms sell their products or services for a price to consumers. Their goal is to maximize their profits in the markets in which they sell the product or services they supply by producing up to the point where their marginal revenue and their marginal cost are equal. Also, because they seek to maximize profits, firms will never choose to charge a price that is below their average variable cost. Their marginal revenue and ultimately the price they charge are therefore a function of the intensity of competition they have in the market, and the goal of antitrust is to ensure that the price of those products or services remains competitive. An individual firm may have market power if it has a large share of the market and is protected by barriers to entry and/or if consumers are unable to switch to a different supplier. There are socially desirable and socially undesirable ways for firms to limit the competition they are facing. On the positive side, they can innovate and be more efficient than their competitors. On the negative side, dominant firms or firms with market power may limit competition by erecting strategic barriers to entry or limiting competition through eviction of their competitors. Another way firms in a market can limit competition is through a cartel or a merger (if there are barriers to entry). Hence the customary focus of competition authorities on the horizontal price dimension of competition, on exclusionary practices, and on merger control.

124. Let’s now turn our attention to the digital sector, where competition between platforms and ecosystems differs from competition between pipeline firms in a number of ways.

125. First, the internet abolishes distances. Thus, in most cases, unlike in the non-digital world, competition between platforms and ecosystems is global rather than national. This might change, however, if the World Wide Web became more fragmented for technical, political or commercial reasons.

126. Second, digitalization reduces the cost of interaction and transactions between people and groups of people. Digital platforms are thus particularly well suited to facilitate the interaction between several groups of users (for example, between advertisers and final consumers). Transactions or interaction platforms do not produce a specific good or service as do pipeline firms. What platforms do is provide a core service of intermediation between different groups of firms or users. This service of intermediation is often attached to a particular initial core content (for example, exchange of videos or provision of a search engine service). But the technology (digital algorithms) that makes this particular core transaction or interaction possible can usually be adapted to other interactions or facilitate other transactions, which means that platforms tend to grow first by acquiring a large number of users or business firms interested in the initial core interaction or transaction in order to benefit as rapidly as possible from the same-side and cross-side network effects associated with the core service...
and, once they have developed a sufficient base, to grow through diversification to other complementary services which enhance the value of the interaction on the platform. They can do this either by developing new services internally or through acquisition or through enrolling complementors. The core technology (or digital algorithm) that they use allows platforms and ecosystems to deliver a number of different types of interactions or transactions, and what is crucially important for their long-term success is their ability to come up with an attractive set of such transactions and interaction services which will maximize the value of the interactions or transactions of the platform.

127. Competition between digital platforms and ecosystems differs from competition in the non-digital sector on several grounds.

128. First, competition is between multi-sided platforms (or ecosystems) and not between pipeline firms. Platforms have been studied extensively over the last two decades thanks to the fact that non-digital platforms such as payment platforms had attracted the attention of competition authorities. The fact that they have been studied extensively in the economic literature does not mean that agreed-upon solutions have been found on how to adapt competition enforcement tools to platforms. The payment platform cases are an area of antitrust law where we have seen contradictory decisions by competition authorities on how they should be handled as well as much criticism of academics about the approach taken by courts to these new problems, for example with respect to the Amex case in the US Supreme Court.22

129. Second, platforms may raise complex questions for competition authorities concerning the definition of the market in which they operate. Each individual side of a platform may not be a relevant market as the platform does not try to maximize its profits on one side independently of the other side but takes into consideration the interaction between the users on the various sides.23 If each side is not an independent market, the assessment of the market power of a platform is likely to be more complex than the assessment of the market power of a firm operating in a traditional market.

130. Third, same-side and cross-side network effects are crucial elements characterizing transaction and interaction platforms and they give an advantage to a platform that has built a large following of businesses and users. Indeed, everything else being equal, platforms with a large user and business base are able to deliver a qualitatively better core service than the service offered by smaller competitors.

131. This means that attaining a large size is a precondition for the success of a platform. As a result, the objective of a new platform is to grow its user base rather than maximize its short-term profits. The cost of acquisition of a base of users large enough to compete with established platforms is often a sizable investment and can act as a barrier to entry.

132. Fourth, in order to compete with an established platform, there are two main possibilities for a competing platform: the first possibility is that the promoters of the competing platform innovate in order to offer to users and businesses an intrinsically better intermediate service than the core service offered by the established platform. The second possibility is for the competing platform to overcome the network effects of the established platform by offering a different set of complementary services more attractive for consumers and/or businesses.

133. Thus innovation and differentiation (rather than low price and cost efficiency) are the most important drivers of competition among platforms and ecosystems.

134. One of the consequences is that whereas in the non-digital sector, it may make sense to impose structural competition since two pipeline firms offering the same product will have an incentive to become more efficient and to pass on to consumers the efficiency gains that they make thanks to competition, in the digital world having two platforms offering the same core service or the same set of complementary services has a more ambiguous effect on the welfare of consumers. On the one hand, the competing platforms may be tempted to innovate or differentiate their services, thus offering consumers a wider set of services than they would enjoy without the competition between the platforms; but, on the other hand, as long as they offer similar services, each competitor will offer a lower quality set of services than would be the case if it had a wider base. Fragmentation of the supply of identical services may be in the interest of the suppliers but not necessarily in the interest of consumers.

135. Fifth, price competition is meaningless on the side(s) of the platform where a service is delivered free of charge in order to attract a large number of other (paying) users on other side(s) of the platform. On the side or sides on which they do not charge a price, platforms compete on quality and innovation. As the OECD secretariat observed: “When the prevailing price in a market is zero, the offering of improved functionality or new features may be one of the only ways for firms to capture market share. Indeed, in Google Shopping, the European Commission noted24 that ‘In so far as users expect to receive a service free of charge, an undertaking that decides to stop innovating may run the risk of reducing its attractiveness, depending on the level of innovation on the market in question’ (para. 268).” 25

22 US Supreme Court, Ohio et al. v. American Express Co. et al., No. 16-1454, 25 June 2018. For a comprehensive review of the academic criticism leveled at the American Express US Supreme Court decision see, for example, J. Leigh Maniff and Y. Lei Toh, Still on Trial? The Court’s Use of Economic Analysis in the American Express Case, Kansas City Fed Payment System Research Briefing, 1 April 2020.

23 For a discussion of the consequences of the mischaracterization by a competition authority of the market in which a multi-sided platform operates, see, for example, S. Brosis and M. Marcos Ramos, Google, Google Shopping and Amazon: The Importance of Computing Business Models and Two-Sided Intermediaries in Defining Relevant Markets, Competition Policy International, December 2015.

24 Commission Decision of 27 June 2017, Google Search (Shopping), case AT.39740.

25 OECD Competition Committee, Quality considerations in digital zero-price markets, Background note by the Secretariat, 28 November 2018, DAF/COMP(2018)14, para. 32.
Sixth, core platforms provide the technology (the digital algorithms) that will be used for the interactions or transactions that will maximize the value of the platform and orchestrate the use of this technology for a complementary set of intermediation services. Thus the offering of an ecosystem is a set of services jointly offered by the core platform and the complementors it has selected. A complementor is not just a supplier of a service distributed by the platform but is the provider of an interaction or a transaction which, because of its qualities and complementarities with other interactions and transactions offered by the platform or by other complementors, increases the attractiveness of each service of the whole ecosystem for users and businesses. The core platform is the architect of the set of services to be offered by the ecosystem. It chooses the complementary services that complementors may offer and regulates the conditions under which they are allowed to participate in the ecosystem. The core platform of an ecosystem may also offer services that compete with some of the complementors’ services. It may decide to favor its own service over the service that a competitor in the ecosystem is offering or to provide a service that previously was offered by a complementor.

It follows that some practices which may be regarded as unfair by complementors competing with the core platform (such as self-preferencing or the provision of services previously offered by complementors) may nevertheless be economically justified if they globally increase the value of the transactions or communications services offered by the ecosystem. Thus there may be a trade-off between the fairness of the treatment of complementors by core platforms and the welfare of consumers using the platform. Alternatively, the core platform may engage in such practices not to increase the value of the services offered by the ecosystem but to unfairly capture for its own benefit the value of the innovative services offered by complementors. From the competition standpoint, the two possibilities should be treated differently, which raises the question of how competition authorities can differentiate them.

Seventh, ecosystems are not like traditional pipeline firms because they are built around technologies (digital algorithms) that provide generic ways to communicate or to enter into transactions. Thus a number of intermediation services can be provided using the technology of the core platform. As a result, ecosystems are not linked to a particular market, they are entities operating on conglomerate sets of service markets. For example, Amazon started as a bookseller and quickly realized that it could adapt its business model to the sale of many other products. Another example is provided by TikTok, which is a video-sharing app but recently entered the e-commerce market. This means that for an ecosystem competition can come from platforms which, up to that point, provided completely different intermediation services than what the ecosystem provides but which can adapt their technologies of communication and transaction to apply them to a complementary set of services, making the existing offer of the ecosystem obsolete or less valuable for its users or for businesses.

Thus, the definition of relevant service markets is not particularly useful to assess competition issues between digital ecosystems as the ecosystems move across traditionally defined service markets in order to offer sets of complementary services. What is important, however, in order to understand competition between ecosystems is to have a good grasp of the way in which platforms can leverage their intermediation powers on a core service or on a device to other related services and of the consequences that such leverage strategies have on competition.

Eighth, finally because large ecosystems operate simultaneously on many different complementary markets and each ecosystem has an interest in attracting the largest possible base of users, complementors or advertisers, they compete with each other in some areas but also need to cooperate with each other in other areas. For example, Amazon, Microsoft and Apple develop their digital advertising business and therefore compete with Google while Amazon buys ads on certain Google search keywords, and Google is a top web-traffic referrer for a significant portion of Amazon third-party sellers. With respect to social media, Google’s YouTube and Amazon’s Twitch compete in live-streaming, but both companies benefit from their apps being distributed in each other’s app marketplaces. Apple and Google operate the largest mobile app marketplaces in competition with each other but also distribute their own apps through each other’s platform.

The scope for competition among digital ecosystems is, thus, much different (and wider) than what is the case in the non-digital sector since digital ecosystems offering partially or even completely different sets of services can nevertheless be competitors. Finally, the identification of potential competitors is much more difficult in the digital sector and requires an ability to understand how a particular set of complementary competition services could displace another set for users or businesses.

These characteristics mean that most of the competition law instruments, such as market shares or concentration ratios, used for traditional markets in order to assess dominance cannot be easily used when it comes to platforms because of the multiplicity of services they offer simultaneously to different groups of consumers. It also means that market power indicators based on a comparison of price and cost (such as price-cost margins or the Lerner index) cannot be used on each side of the platform to assess its market power. It finally means that the characterization of an abusive practice of a platform may be either different or more complex than in the case of traditional markets. For example, pricing below cost (on one side of the platform) may be a profit-maximizing strategy and therefore not qualifiable as a predatory practice, unlike what is the case on traditional markets. But a degradation of quality may be an abuse of dominance by the
platform\textsuperscript{27} with the added difficulties that quality is often not easily observable and that quality is multidimensional, which means that the degradation of some elements of quality may in fact allow an improvement in other dimensions of quality (for example, the use by a platform of data to which it should not have had access may be a degradation of the privacy of the users but also allow the platform to give a more relevant service to those users).

2. Merger control

143. Merger control analysis requires the competition authority to compare the likely post-merger situation with a counterfactual which is what would likely happen to the market if the merger did not take place. The competition analysis tries to assess whether the merger is likely to increase competition in the market or, to the contrary, to allow the merged parties to engage in unilateral exploitative or exclusionary practices or is likely to lead to a coordinated dampening of competition between the merged entity and its competitors. The post-merger situation is to be compared to what would be likely to happen in the market if the merger did not take place.

144. Mergers in the digital world are frequent and there is a pattern of core platforms of large ecosystems acquiring, for what seems like very large sums of money, small promising startups which have developed an innovative service or have improved an already existing one and often have very small turnovers (even though they may have a large user base). This pattern has attracted the interest of competition authorities, which suspect that the high price paid for such innovative startups may be an indicator of the fact that the large platforms are attempting to suppress actual or potential competition. The fact that a number of these transactions do not meet the thresholds for controllability of mergers (due to the very small turnover of a large number of targets) has led to a public policy debate in a number of countries about whether merger control thresholds should be adapted to allow competition authorities to control such mergers.

145. To be successful (i.e., to be able to enjoy sustainable profitability) a platform must combine three elements in order to monetize its service either directly or indirectly by charging advertisers. First, it must be based on a core innovative service (whether social networking in the case of Facebook, a search engine in the case of Google, a digital retail service in the case of Amazon, etc.). Second, it must have acquired a sufficiently large user base (and therefore it must raise the capital necessary to fund the acquisition of this user base). Finally, it must offer a set of complementary services, each one increasing the value of the other services, to benefit from the economies of scope allowed by the technology and keep its users engaged.

146. It is not clear that the skills necessary to make a platform successful are easily found within each digital organization.

147. A large platform may have difficulty coming up with the technological innovation necessary to make its offer more attractive. For example, one of the reasons Facebook decided to buy Instagram was because it struggled to adapt Facebook Photos (which in 2009 was the largest photo-sharing service in the world) to the shift to mobile technology.

148. An app developer may not be able to build its user base as importantly and as speedily independently of an already established platform.

149. For example, when Instagram was bought by Facebook in April 2012 it had 30 million users. The founder and developer of Instagram, Kevin Systrom, wanted to avoid "the risks of independence"\textsuperscript{28} (i.e., the difficulty of financing the expansion of its user base) while at the same time remaining independent. He also considered that Instagram could develop as a social network, stating in 2010: "The next network is people interested in sharing life visually."\textsuperscript{29} Indeed, eight years after its acquisition Instagram has more than 1 billion users.

150. The reason he agreed to the acquisition of Instagram by Facebook was that Mark Zuckerberg assured him that it would have the freedom to manage Instagram and that "if Instagram was part of Facebook, they’d have unimaginable resources to keep growing, faster."\textsuperscript{30} Indeed, eight years after its acquisition Instagram has more than 1 billion users.

151. Similarly, WhatsApp was bought, again by Facebook, in February 2014 when it had 450 million users. It now has more than 2 billion users. It is debatable whether it could have grown this fast if it had not been acquired by Facebook.

152. When Google launched in 1998, incumbents like Yahoo, Excite, AltaVista, and others dominated the search engine market. Sergey Brin and Larry Page released the first version of Google in August in 1996. Thanks to the innovative algorithm they had developed, search results with the Google search engine were significantly better than the results of the incumbent search engines of the time, most of which simply ranked pages based on the number of times the search term appeared on the web page. Sergey Brin and Larry Page, however, were initially not interested in developing their search engine by themselves and they tried to license their search technology but failed, so they continued improving the product. Google was incorporated in 1999 and both Excite and Yahoo turned down buying Google for only $1 million.

\textsuperscript{27} The decline in quality of the service may manifest itself on either side of the platform. For example, in February 2019 the Japanese Fair Trade Commission opened an investigation on the practices of Amazon Japan, Rakuten and Yahoo Japan, all suspected of having degraded the quality of the service they render to online vendors by forcing them to shoulder an unfair burden in rewarding customers through loyalty programs.

\textsuperscript{28} S. Fryer, The Inside Story of How Facebook Acquired Instagram, OneZero, 5 August 2020.


\textsuperscript{30} S. Fryer, The Inside Story of How Facebook Acquired Instagram, OneZero, 5 August 2020.
153. Competition authorities face a number of challenges when controlling mergers in the digital sector.

154. To assess mergers, competition authorities have to compare the expected situation after the merger with the expected situation in the market if the merger does not take place. This requires the competition authority to assess whether the merger is likely to result in a decline in the intensity of competition or innovation either due to an increase in the market power of the merging firms (unilateral effects) or a diminished intensity of competition in the market (coordinated effects). To evaluate the potential effect of the merger, the competition authority must assess, inter alia, potential competition (the likelihood that entry would take place sufficiently rapidly and significantly to prevent the merging firms from exercising their market power). To assess what would happen if the merger does not take place, the competition authority must assess what would happen to the target barring the merger. Would the startup develop relatively fast and be (or become) a competitive constraint on the platform or could it be absorbed by a competing platform, thus reinforcing competition in the market? Finally, the competition authority must assess the extent to which the alleged efficiencies associated with the merger are merger specific, and could be significant enough to offset the anticompetitive effects of the merger on consumer welfare.

155. First, the fact that digital startups are acquired at very high prices compared to their turnover does not necessarily constitute an indicator of the fact that this price includes a rent premium indicative of a restrictive effect on competition of the merger. Indeed, if the acquisition of the startup allows the platform to increase the value proposition of the entire set of complementary services it offers or to increase the intensity of the direct or indirect network effects it benefits from, the discounted value of the increased profits of the platform may be much larger than the discounted value of the expected benefit of the sales of the services of the target startup. Thus whereas in the non-digital sector an inflated acquisition value is often indicative of an expected monopoly profit from the merger, this presumption is weaker for acquisitions of startups by platforms. This is not to say that such high acquisition prices never include a monopolistic rent but to suggest that the price of the acquisition is, at the very least, in digital mergers a very ambiguous indicator and a poor predictor of whether the acquisition is anticompetitive or not. As we saw in discussing the acquisition of Instagram by Facebook, it would seem that the merger was the result of a combination of considerations: the increase in the value of the Facebook offer through the acquisition of a superior technology (better than what Facebook had been able to come up with), a new service for mobile phones as well as the fear that competition might set in.

156. Second, as mentioned earlier, the definition of the relevant markets on which a platform operates is much more complex than in the non-digital world, in particular on the sides where services are offered by the platform at zero price to consumers. Structural measures of competition such as the Hirschman–Herfindahl index cannot be used on markets where the user price is zero since they are based on the value of the market shares of the participants in the market. Yet it is crucial in a merger examination to understand what the competitive pressures faced by the merging parties are. If the traditional instruments such as the evaluation of cross-price elasticities or the hypothetical monopolist test can be useful on the sides of the platform where users (such as advertisers) have to pay a positive price, these instruments are useless if prices are equal to zero. New tools thus have to be developed to assess substitutability between free services. Erik Brynjolfsson and A. Collis developed a method for measuring the benefits associated with the digital services using large-scale well-designed surveys by exploring how much users would need to be paid to give up a given digital service for a certain period of time. It has been suggested that this sort of methodological tool could be used to map the preferences of consumers with respect to alternative digital services. This kind of approach combined with the traditional methodologies to assess substitutability on the sides of the platforms for which users pay could give competition authorities a more accurate view of the competitive environment of the merging parties. So far, competition authorities have had little experience in running methodologically sound large-scale surveys of consumers.

157. Third, as previously mentioned, merger control assessment is a prospective exercise and competition authorities must therefore compare the expected effect of a merger with the expected developments on the identified relevant market if the merger did not take place over a period of a few years (usually 3 to 5 years). This predictive exercise is always difficult (which is the reason competition authorities tend to focus on the effect of the merger in the few years following the merger). But the exercise is made even more difficult in dynamic sectors in which the combination of complementary services offered by platforms changes constantly, disruptive innovations are frequent, business models evolve, consumer preferences are not stable and competition on quality is, at least to some users of platforms, more important than competition on prices.

158. These characteristics imply that competition authorities cannot easily rely on the past to predict the future. As the EU Commission states: “However, in acquisitions of nascent competitors, the current reality may be a poor proxy for the situation absent the merger, given the high potential of the young target and dynamic nature of the markets. Hence, in addition to the situation post-merger, the Commission has to predict also the likely evolution of the target absent the merger (e.g., whether the target’s novel pipeline products/services will succeed, whether it will pivot to another area to directly compete with the acquirer, etc.). While merger control is by definition a forward-looking exercise, making an accurate prediction as to the future of a nascent, fast-growing company in a dynamic market is particularly challenging.”

159. Indeed, we have seen that dominant firms like Myspace can be displaced in a few years, that a comparatively small platform like Instagram can develop very rapidly and compete with the most established social media networks thanks to a shift in the pattern of consumption of users or that a unicorn like TikTok can develop an innovative technology to produce and exchange videos, which even the more successful social media cannot emulate, and capture a large segment of the social media market in just a few years. To assess whether the target firm in a digital merger is a potential competitor of the acquiring platform or whether other potential entrants could materialize, competition authorities have to look beyond the characteristics or structure of the digital markets at the time of the merger and evaluate the dynamics of the ecosystems and platforms. This means that competition authorities must develop a specific intelligence function with respect to digital markets allowing them to have a more dynamic approach to merger control. There have been calls for competition authorities to set up digital units within their institutions; those units must clearly understand the business side of the ecosystems and the evolving characteristics of digital service users’ demand (while the competition authority itself must be vigilant to avoid being captured by the digital firms).

160. A fourth issue is related to the assessment of potential competition in the examination of so-called potential “killer’s acquisition.” In such cases the competition authority must consider whether the startup target was a potential competitor of the acquiring platform to decide whether the merger restricted potential competition.

161. The burden of proof for the competition authority when it considers this question is daunting both in the US and in Europe. In the US, as Glick, Ruetschlin and Bush argue: “The Department of Justice will not challenge a potential competition merger if entry into the market is easy. This protocol requires the Department of Justice to demonstrate some difficulty of entry or barriers to entry in the concentrated market. (. . .) If entry is not easy generally, then the Department of Justice has to show that [the target] had an entry advantage not possessed by three or more firms. (. . .) The final criteria for a potential competition claim is for the government to show that [the target’s] entry into [the relevant market(s)] would deconcentrate the market or have a significant procompetitive effect. Under the Merger Guidelines, this effect can be established by showing that [the target] had a market share of 9% or more.”33

162. In the EU, “[t]he Commission’s framework for the assessment of potential competition and innovation is set out in its merger guidelines. In particular, the Commission’s Horizontal Merger Guidelines clarify that a merger with a potential competitor can have similar anti-competitive effects to mergers between two undertakings already active on the same relevant market. For a merger with a potential competitor to have significant anti-competitive effects (i) the potential competitor must already exert a significant constraining influence or there must be a significant likelihood that it would grow into an effective competitive force; and (ii) there must not be a sufficient number of other potential competitors.”34

163. The question then is whether the US Justice Department and US courts and the EU Commission and European courts have taken such a narrow view of the conditions under which a merger could be blocked because it restricts potential competition as to make this potential competition restriction approach unworkable in the digital sector where the targets are often not yet in the relevant markets (particularly but not exclusively the advertising market), where, at the time of the merger, they have a negligible market share compared to that of the acquiring platform for the services offered by the platform (or offer services for free to users who can multi-home, which makes any attempt to measure their market share problematic) and where there are usually a number of other potential competitors in various adjacent markets that could conceivably diversify their offer to compete with the large platforms.

164. As Glick, Ruetschlin and Bush show, the failures of competition authorities on both sides of the Atlantic to block the Instagram and the WhatsApp mergers because of their implications for potential competition are understandable in view of the burden of proof imposed on competition authorities in such cases. In both cases, this concerned the fact that potential competition could come from many different adjacent platforms.

165. One solution proposed by the Crémer, de Montjoye and Schweitzer report is to establish a structural presumption for potential competition mergers in technology markets. The report argues: “While the EUMR’s ‘significant impediment to effective competition’ test remains a sound basis for assessing mergers in the digital economy, we believe that there is a need to revisit the substantive theories of harm to properly assess certain specific cases. This concerns specifically cases where a dominant platform and/or ecosystem which benefits from strong positive network effects and data access, which act as a significant barrier to entry, acquires a target with a currently low turnover but a large and fast-growing user base and a high future market potential. In such cases, competition law should be particularly concerned about protecting the ability of competitors to enter markets, as competition in the market is typically reduced and competitive threats will typically come from the fringe. Buying up promising start-ups that offer fringe products or services may therefore result in early elimination of potential competitive threats. In this setting, the competitive risk resulting from an acquisition is not limited – as in traditional ‘conglomerate’ theories of harm – to the foreclosure of rivals’ access to inputs. It extends to the strengthening of the platform’s (or ecosystem’s) dominance, because the acquisition can:


34 Start-ups, killer acquisitions and merger control, para. 30, see note 32.
(i) intensify the loyalty of those users that consider the new services as complements to services already offered by the platform/ecosystem; and (ii) help retain other users for which the new services might be partial substitutes to the ones already available. Therefore, we think that the best way to handle these acquisitions is to inject some ‘horizontal’ elements into the ‘conglomerate’ theories of harm and try to answer the following questions:

(i) Does the acquirer benefit from barriers to entry linked to network effects or use of data?
(ii) Is the target a potential or actual competitive constraint within the technological/users space or ecosystem?
(iii) Does its elimination increase market power within this space notably through increased barriers to entry?
(iv) If so, is the merger justified by efficiencies?

The test proposed here would imply a heightened degree of control of acquisitions of small start-ups by dominant platforms and/or ecosystems, to be analysed as a possible strategy against partial user defection from the ecosystem. Where an acquisition is plausibly part of such a strategy, the notifying parties should bear the burden of showing that the adverse effects on competition are offset by merger-specific efficiencies. This theory of harm does not create a presumption against the legality of such mergers. However, it takes due account of new business strategies and the competitive risks they raise, and should help to minimise ‘false negatives’ in a setting where the costs of systematic false negatives are particularly high.35

166. The above proposal would enlarge the scope of analysis of competition authorities by focusing them on the conglomerate technological/users space of ecosystems rather than limiting the analysis to assessing competition on narrowly defined service markets and would eliminate the necessity to show that there is not a sufficient number of potential competitors other than the target. However, it does not solve the complex question of the standard of proof that the competition authority must meet to establish that ex ante the target is a potential competitor to the acquirer. A revision of our approach to potential competition cannot be avoided by this proposal.

167. Equally, the increased benefit of scale and scope economies due to the merger of a platform and a potential competitor is both an increase to the barriers to competition with the platform and a source of efficiencies. This begs the question of the standard of proof that the competition authority will use to assess whether the merger is justified by efficiencies.

168. A fifth issue is that of remedies. One of the consequences of our previous discussion on the possibility of data efficiencies in mergers between platforms is that structural remedies, such as divestitures, on which competition authorities have traditionally relied to solve competition problems associated with anticompetitive mergers, may have the unintended consequence of lowering the quality of digital services to users and reducing consumer welfare if they are not complemented by measures to facilitate data portability between the merged firms and the divested businesses. But, as we saw earlier, measures to facilitate data portability may not always be effective or may have some negative consequences on competition.

169. Furthermore, given the difficulties in understanding the dynamics of the digital sector, given the fact that new or different business models are constantly appearing, and given the fact that the behavior of users of digital services is not always well understood or anticipated, it is very difficult for competition authorities to formulate behavioral remedies in digital merger cases. As Geoffrey Parker, Georgios Petropoulos, and Marshall Van Alstyne state: “[W]e should strengthen the ex-post evaluation of merger analysis for big platforms to better understand the validity of analysis at the time of the merger and whether the proposed remedies are the appropriate ones. Mistakes in this analysis should receive a particular attention and have a didactic function when the same big platform comes forward with a notification of its next merger. We should be ready to impose remedies that are contingent on specific future outcomes. If it becomes clear that the remedies attached to the past approval of a merger do not have the desired effects, there should be flexibility such that remedies could be modified accordingly. It would be helpful if remedies are periodically reviewed to assess whether they have the desired effect and are then revised or updated. The specific targets in terms of the welfare impact of a merger as well as authorities’ concerns should be clearly communicated at the time of the approval of the merger. Remedies should be flexible to change in order to ensure that the specific targets are reached, if needed.”36

III. The EU and UK regulatory proposals

170. To tackle some of the challenges of competition law enforcement in the digital sector, on 15 December 2020 the European Commission unveiled a proposal for a regulation on contestable and fair markets in the digital sector (Digital Markets Act). This proposal is an attempt to complement its existing enforcement powers, which it considers neither sufficient to address some of the competition concerns raised in digital markets nor as having a sufficient deterrent effect on the largest digital players.

171. One important part of the proposed regulation deals with the within ecosystem relationship between some platforms (integrated or not) and third-party suppliers of complementary services.

172. The regulation would impose a number of constraints both in terms of prohibited practices and in terms of prohibited practices on “gatekeepers,” defined as providers of “core platform services” (online search engines, online intermediation services, online social networking services, video-sharing platforms, operating systems, interpersonal communication services, cloud computing, and advertising) that: (i) have a significant impact on the internal market; (ii) serve an important gateway for business users to reach end users; and (iii) enjoy an “entrenched and durable position” either at present or foreseeably “in the near future.” Threshold levels with respect to the turnover of these platforms, the number of EU countries they serve, their number of end users and number of business users are proposed to establish the rebuttable presumption that a platform qualifies as a “gatekeeper.”

173. The positive obligations are designed to protect the businesses using the platform (either to provide complementary services to the core services of the platform or as a marketplace) against the possibility that the gatekeeper will use their data to outcompete them or self-preference its own marketplace) against the possibility that the gatekeeper will use their data to outcompete them or self-preference its own marketplace. They would include: (i) an obligation to allow businesses using the platform (either to provide complementary services to the core services of the platform or as a marketplace) against the possibility that the gatekeeper will use their data to outcompete them or self-preference its own marketplace) against the possibility that the gatekeeper will use their data to outcompete them or self-preference its own marketplace; (ii) an obligation to refrain from using any aggregated or non-aggregated data, which may include anonymized and personal data that is not publicly available to offer similar services to those of their business users; and (iii) an obligation to provide to any third-party providers of online search engines, upon their request, with access on fair, reasonable and non-discriminatory terms to ranking, query, click-and-view data in relation to free and paid search generated by end users on online search engines of the gatekeeper, subject to anonymization of the query, click and view data that constitutes personal data; and (iv) an obligation to apply fair and non-discriminatory general conditions of access for business users to the gatekeeper’s software application store.

174. The obligations imposed on the gatekeepers would be either obligations that would apply to them irrespective of their specificity or obligations which would be “susceptible of being further specified” on a case-by-case basis.

175. The obligations would prevent the gatekeepers from combining personal data from their core platform services with data from other sources (including other services offered by the gatekeeper) or from restricting business users from contracting with end users outside of the gatekeepers’ ecosystems or from requiring business users of the platform to use, offer or interoperate with any identification service of the gatekeeper in the context of providing its services via the relevant gatekeeper’s core platform services. Other self-executing obligations would protect the advertisers and publishers to which gatekeepers provide advertising services by imposing transparency obligation on the gatekeeper with regard to the price paid by the advertiser and publisher, as well as the amount of remuneration paid to the publisher, for the publishing of a given ad and for each of the relevant advertising services provided by the gatekeeper.

176. The second category of obligations “susceptible of being further specified” would include:

- an obligation not to use data acquired by the platform in relation to business users to then compete with those business users, unless the data is publicly available;
- obligations to allow end users to uninstall any pre-installed software applications on its core platform service, an obligation to allow installation and effective use of third-party software applications or software application stores (subject to certain carve-outs) and not to technically restrict end users from switching between and subscribing to software applications and services accessed under a gatekeeper’s operating system;
- an obligation to allow business users and providers of complementary services access to and interoperability with the same operating system, hardware or software features that are available or used in the provision by the gatekeeper of any ancillary services;
- an obligation to refrain from using any aggregated or non-aggregated data, which may include anonymized and personal data that is not publicly available to offer similar services to those of their business users;
- an obligation to provide to any third-party providers of online search engines, upon their request, with access on fair, reasonable and non-discriminatory terms to ranking, query, click-and-view data in relation to free and paid search generated by end users on online search engines of the gatekeeper, subject to anonymization of the query, click and view data that constitutes personal data; and
- an obligation to apply fair and non-discriminatory general conditions of access for business users to the gatekeeper’s software application store.
Are remedies the problem? You may have lately heard on the conference circuit that cases are good but remedies are horrible. It’s clear why one would say that, but it can be a legitimate view. The way we see it, though, remedies, and their outcome, often tell you a lot about how solid a case really is. Imagine a fictional case where there would be no causality between the conduct found as abusive and its alleged effects (for example, because the [dominant company’s] market share was due to superior quality). If you impose a remedy targeting that conduct, the remedy will of course not have any impact. Arguably, the remedy’s failure would simply expose that the conduct wasn’t a problem in the first place. If one believes that the theories of harm underlying a decision are sound, and we believe that a compliant remedy is insufficient, why don’t we simply draft decisions differently?  

181. Others have made the point that promoting a regulatory framework for the digital sector without fully understanding how competition works in this sector may be dangerous.  

182. If ex ante regulation is considered to be necessary to control large platforms, the next question is what type of ex ante regulation. This question arises if, for example, one compares the proposed DMA regulation and the Competition and Markets Authority (CMA) proposal to the United Kingdom government which was launched at about the same time as the DMA.  

183. In its proposal, the CMA suggested the establishment of a Digital Markets Unit (DMU) and the implementation of a new regulatory regime for “the most powerful digital firms”—the Strategic Market Status (SMS) regime.  

184. There are a number of differences between the EU and the CMA proposals.  

185. Unlike the DMA, the CMA proposal does not rely on quantifiable thresholds and criteria in order for a platform to be subject to the regulation. It relies on an “evidence-based” economic assessment as to whether a firm has a substantial entrenched market power in at least one digital activity, providing the firm with a strategic position (meaning the effects of its market power are likely to be particularly widespread and/or significant).
189. The excessive rigidity of the EU proposal has also been raised by various other commentators such as Laure de La Raudière,42 chairperson of ARCEP (French Regulatory Authority for Electronic Communications, Post and Press distribution), or Kay Jebelli.43

190. Second, there are issues related to the way in which the proposed regulation has been elaborated. As Caffarra and Scott Morton note: “With experience and familiarity with past, current, and pipeline EC antitrust cases, one can just about assign each entry to a particular company and its issue. (. . .) And then, when the mapping is finished, it is clear that some rules really are specific to one—or perhaps two—platforms, but unclear how they might or should apply to others, both within and outside the traditional GAFAM list.”44

191. Indeed, the substantive part of the regulation looks like a compendium of the outcomes of past EC decisions. This approach has three characteristics:

– First, it assumes that the past decisions were correct, an appraisal that may not be universally shared.

– Second, the regulation generalizes the solutions adopted in each individual case without presenting the reasons the particular solution of each case should be made into a general rule applicable to all platforms.

– Third, there is a notable lack of attempt to relate the obligations referred to in Article 5 and Article 6 to general competition law principles.

192. Caffarra and Morton state that “the list of obligations outlined in the DMA seems to be a catalog derived from past and current antitrust cases involving the usual set of Big Tech platforms, where the particular remedy has been generalized to apply to all gatekeepers, but without an explanation as to how and why that would work. Translating these dicta into actionable rules that people and companies understand likely will require clearer organizing principles around business models.”

193. A third issue which has been raised by Laure de La Raudière, K. Jebelli and a few other commentators is the perceived bias in the proposed regulation in favor of business users of platforms to the detriment of competition between platforms or ultimate consumer welfare. The perception is that the DMA proposal, in prohibiting self-preferencing behaviors of vertically integrated platforms and the imposition of most-favored-nation clauses or the mandatory use of certain platforms’ services in their relationships with end users, is concerned about protecting business users’ access to gatekeeper platforms. In the eyes of the critics, these obligations have the potential to increase the systemic dependence of business users and ancillary services’ providers on the core platform but do little to create the conditions for competition to be restored at the platform level.

194. For example, Laure de la Raudière considers that: “The Commission’s proposal aims to make digital markets contestable and fair. However, the proposal actually focuses primarily on the relationship between gatekeepers and the business users who depend on their services. There are very few obligations aimed at challenging these centralized ecosystems by facilitating, for example, the entry of new players who would be likely to compete directly with these gatekeepers. In addition, by focusing on user companies, the [proposed regulation] offers very few provisions to directly protect the interests of citizens.”45

195. Along the same lines K. Jebelli argues that “under the DMA, the Commission must ‘ensure a fair balance’ in the commercial relationship between the platform operator and its business users regardless of the effect on consumers (see Article 10). As proposed, the DMA will set in stone a policy preference for suppliers at the expense of consumers. (. . .) what is ‘fair’ for suppliers or would increase ‘contestability’ for rivals may not necessarily be in the consumer interest (or even in the interest of differently situated business users). (. . .) Legislators will have to decide, should the DMA put the consumer interest first, allowing companies to justify their product design decisions as pro-competitive or pro-consumer, or should the Commission’s primary prerogative be protecting competitors interests, regardless of how that may harm consumers?”46

196. It is worth noting that the fact that the proposed DMA is focused on the commercial relationship between the platform operator and its business users rather than on the welfare of consumers or on the promotion of competition between platforms should come as no surprise since the DMA proposal is largely based on EU Commission decisions—such as the Google Android decision—which were focused on the relationship between the platform and its business users and in which competition between platforms (Google and Apple) was assumed away.

197. Whereas the DMAs focus is on defining the “rules of the road” for digital gatekeepers to follow, with the aim of ensuring that these markets are contestable and the gatekeepers can be challenged, the UK proposal has a different focus in that the core concern is to address the root cause of market power of platforms with Strategic Market Status (SMS).

198. A fourth issue that has been raised is the problematic lack of consideration of efficiencies in the proposed DMA. For example, Cabral, Haucap, Parker,

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44 C. Caffarra and F. Scott Morton, see note 38.

45 L. De La Raudière, see note 42.

46 K. Jebelli, see note 43.
Petropoulos, Valletti, and Van Alstyne state: “Generally speaking, we agree with the idea of using ex-ante regulation as a means to avoid slow, protracted interventions. However, regulators should be careful to avoid an unavourable trade-off between speed and quality of judgement.”

199. They give several examples of possible trade-offs not considered in the proposal: “For example, Article 6 states that one should allow business users to bypass app stores. While we agree that this often corresponds to an abuse of dominant position, we can also envisage efficiencies emanating from centralised control. As such, we would include these behaviours in our grey list that lets the platform make its case that efficiencies justify a closed system. Similarly, Article 5 would bar platforms from requiring its users to employ the platform’s own identification system. Again, we would include these behaviours in our grey list, as there are reasonable theories of value creation that justify this type of restrictions. Again, the regulated platforms would need to justify why those restrictions are necessary though.”

“Google requires users of their location-based services to also use a Google approved version of Android. Hardware manufacturers who wish to use Google apps are required to join the Open Handset Alliance which obligates members to use only Google approved Android versions. In this way, even though Android is open source, Google’s control prevents fragmentation of the code base. In this sense, one may argue that Google provides a benefit that stems from some level of standardisation. The downside is that potential operating system innovations are not interoperable with Google data services and hardware manufacturers have to contend with fewer variants of the Android operating system than they otherwise would and are thus able to ensure interoperability. The challenge, of course, is to know whether the potential harm is larger than the benefits.”

200. Fifth, the EU Digital Markets Act proposal says very little about merger control (because the Commission felt that it lacked the legal basis to propose a modification to the EU merger control regulation). Article 31 in the DMA draft just mentions an obligation for gatekeepers to “inform” the EC of any planned deals, but nothing flows from there. Without changes to the merger regime, the EC digital regulation package will remain incomplete (...). While Member States (and the UK) will be able to enforce vigorously in this space, the EC will be hobbled in its ability to protect dynamic competition and innovation through this critical tool, and digital mergers will continue to be allowed based on a standard of proof which is simply unfit for purpose. By comparison with other jurisdictions, legal caution about having to demonstrate loss of competition to the usual standard ‘in Luxembourg’ is likely to cripple the initiative that should flow from impetus behind the DMA. The EC may state publicly that potential competition concerns are nothing new, but the reality is it has not enforced against killer acquisitions or acquisition of nascent competitors at anything like the rate of the CMA. The adoption of the DMA (and the DSA) responds to a call for regulators to serve citizens and consumers better. Without explicit changes to merger rules, history is likely to repeat itself and hold back competition in this sector.”

201. For example, Cabral, Haucap, Parker, Petropoulos, Valletti, and Van Alstyne state: “Acquisitions of small firms by large gatekeepers may serve different purposes, including pre-empting a potential competitor (anti-competitive effect) and complementing an existing asset with a new product (pro-competitive effect). There are also important effects on innovation, both innovation by new start-ups and by the incumbent gatekeepers. This variety of situations, which is illustrated by the extensive list of GAFAM (Google, Apple, Facebook, Amazon, and Microsoft) acquisitions since 2000, suggests that merger policy is a complex issue. One thing however seems clear: the traditional criteria for reviewing and deciding on a merger have little bite in the digital space. The Panel notes that, apart from the obligation to notify any mergers, the DMA says very little about mergers initiated by gatekeepers.”

202. Along the same lines, Caffarra and Scott Morton note: “[T]here is nothing in the DMA on merger control. (... ) this leaves a big lacuna in the rules. Art. 31 in the DMAdraft just mentions an obligation of gatekeepers to ‘inform’ the EC of any planned deals, but nothing flows from there. Without changes to the merger regime, the EC digital regulation package will remain incomplete (...). While Member States (and the UK) will be able to enforce vigorously in this space, the EC will be hobbled in its ability to protect dynamic competition and innovation through this critical tool, and digital mergers will continue to be allowed based on a standard of proof which is simply unfit for purpose. By comparison with other jurisdictions, legal caution about having to demonstrate loss of competition to the usual standard ‘in Luxembourg’ is likely to cripple the initiative that should flow from impetus behind the DMA. The EC may state publicly that potential competition concerns are nothing new, but the reality is it has not enforced against killer acquisitions or acquisition of nascent competitors at anything like the rate of the CMA. The adoption of the DMA (and the DSA) responds to a call for regulators to serve citizens and consumers better. Without explicit changes to merger rules, history is likely to repeat itself and hold back competition in this sector.”

203. Unlike the case of the European proposal, the UK proposal foresees the creation of specific tightened merger rules applicable to designated Strategic Market Status platforms. The substantive test of “substantial lessening of competition” would remain the same for SMS merger control as for all merger controls but the standard of proof would be lowered from a “balance of probabilities” test to a “realistic prospect” test since “Uncertainty should not be an excuse for inaction.” The UK proposal also envisions the imposition of a mandatory suspension of the mergers above a certain threshold (probably in relation to transaction value).

204. Finally, concerns have been voiced about the coexistence of the DMA exclusively enforced by the EU Commission and Article 102 of the TFEU, which prohibits abuse of dominance and can be enforced both by the EU Commission and the national competition authorities and courts.
205. Since, after the adoption of the DMA, the European Commission would be able to impose the same behavioral obligations as national competition enforcers, without having to prove likely anticompetitive effects, and without regard for negative spillover effects, plaintiffs will have a strong incentive to bring all commercial disputes with a “fairness” or “contestability” element under the DMA. Kay Jebelli notes: “This enforcement power will bypass the legal requirements of Article 102 developed over decades through the wisdom of Courts. It will apply broadly to successful digital platforms, exclude consideration of consumer interests, and ignore evolving market dynamics. Not only will this necessarily make the Commission the arbiter of all commercial disputes between platform operators and business users, it will make it impossible for national authorities or courts to allow pro-competitive conduct based on an assessment of effects.”

206. Cani Fernández, the chair of the Spanish Competition Authority, makes a related point when she states: “[B]oth sets of rules, the DMA and the competition rules, might eventually collide. The DMA would surely comprehend companies and practices that could at the same time fall under the scope of Articles 101 and 102 TFEU. Since the DMA would be applied faster and its investigative requirements would be significantly lower than those of competition law (e.g. shifting the burden of proof on platforms that reach the quantitative thresholds to demonstrate that they are not gatekeepers, and no need to demonstrate harm to consumers, among others), it is not hard to imagine that the DMA could prevail over the application of the competition rules in those cases. (...) The DMA will therefore apply not only to instances that escape the scope of the current competition rules, but also to cases that could be targeted by both sets of rules. This implies the necessity to set up strong coordination mechanisms between the application of the DMA and that of competition law provisions, not only within the European Commission but also between the latter and the national competition authorities of the EU Member States. Just as the enforcement of Articles 101 and 102 TFEU does require strong coordination between the European Commission and the national competition authorities to avoid parallel investigations and discrepancies on the substantive application of market conditions, a smooth enforcement of the DMA would require the set-up of similar coordination mechanisms between enforcers.”

207. Yet there are no provisions in the DMA proposal to establish a cooperation mechanism between the EU Commission and the national competition authorities.

IV. Conclusion

208. It is at times difficult not to lose one’s way in the debate on how competition law should be adjusted to deal with the issue of competition in the digital sector for at least two reasons.

209. The first reason is the intrinsic difficulty of understanding the new and complex competition issues raised by the digital sector in which platforms or ecosystems rather than pipeline firms are the main actors, technology rather than the confines of economic markets provides the framework which determines the scope and type of activity of the platforms or the ecosystems, markets are multi-sided, competition is based on innovation, differentiation and quality rather than on price, cross-subsidization is rampant, and growth rather profit maximization may the principal concern of the platforms. As a result of the recent development of the digital sector and of its complexity, very little is known, at least by competition authorities, on how competition works between platforms and ecosystems and how innovation develops in this sector. What is clear is that most of the concepts and the instruments we use in competition law enforcement of non-digital sectors are of little use and little relevance when we deal with competition issues in the digital sector.

210. The second reason is difficult not to lose one’s way in that all the participants in this debate (and they are all the more numerous as digital markets are multi-sided) have a strategic interest to defend a particular point of view and that it is often difficult in this complex debate to get a sense of where the truth lies. Business users of platforms have a clear interest to benefit from an easy access to the platforms with the least possible costs and constraints allowing them to reach the platform’s users. Platforms have both an interest in monitoring the complementarity between their core services and the services offered by third parties on their platform and to extract the maximum profit from users, app developers or advertisers (depending on their business model) once they have achieved a sufficient size. Economists have a vested interest in promoting a case-by-case analysis of the economic competition issues raised in the digital sector and in playing up the economic complexity of those cases. Lawyers have a vested interest in preferring the procedures which are the most beneficial to their clients. Competition authorities have a vested interest in getting tools that will allow them to intervene rapidly and at a low cost in order to dispel the idea that they are unable to deal effectively with digital issues. Low cost to these authorities means regulatory tools which, on the one hand, allow them to intervene with a lighter standard of proof than classical competition law enforcement and, on the other hand, protect them against the risk that review courts might overturn their decisions. Politicians, finally, in a period of economic populism in which the excessively high profits of a few are widely seen as proof of the inherent unfairness of modern capitalism, have a vested interest in appeasing voters by taking an activist stand on platforms by threatening them with structural deconcentration, higher taxation, and regulatory intervention.


211. However, a few suggestions emerge from this review of some of the issues raised.

212. It is clear that a lot of research efforts have been devoted to understanding how competition works in the digital sector by researchers in the areas of business strategy and market economics. The most urgent challenge is to use this extremely valuable material to adapt the conceptual framework of competition law enforcement to the digital sector.

213. This requires, among other things, finding ways to integrate into this framework the simultaneous consideration of competition between platforms and competition within platforms (between the platform and third-party business users).

214. It also requires a careful consideration of the various trade-offs between the welfare of consumers, the fairness of the treatment of third parties by large platforms, the reduction of barriers to entry, the intensity of competition among platforms and the production of innovation. This consideration should inform the formulation of a few high-level principles on competition in the digital sector which will be the basis either for competition law enforcement or the design of a regulation.

215. Third, it is clear that some (or maybe most) of the instruments (such as the market shares, concentration ratios, HHI Index, Lerner index, etc.) that we use in traditional competition law analysis need to be adapted to the reality of platform competition and some new instruments must be developed (for example, to measure competition for attention).

216. Fourth, in order to avoid possible costly mistakes, we need to have a clearer view of how to deal with four major issues frequently encountered in the digital sector.

217. First, we must clarify our thinking about the rationality of decision making by users of platform services when it comes to the issue of privacy. If privacy is to be considered as a quality dimension of services offered by platforms, is there any pragmatic way to assess the value that consumers place on this dimension of quality when there are trade-offs between the protection of privacy and the other dimensions of quality of the services rendered by platforms? Is there any pragmatic way to assess how this value varies with the particular trade-off considered?

218. Second, under which circumstances and through which mechanism does the accumulation of data by a platform constitute a barrier to entry for its competitors? Should we make a difference between the cases where access to a platform's data is a necessary condition for competitors to provide a competing service (where the data is an essential facility) and cases where the accumulation of data by the platform does not prevent competing platforms from offering a similar service but allows the platform to have a competitive advantage by offering a higher quality service than its competitors? How should we treat cases where the accumulated data of a platform gives it a competitive advantage in the provision of high-quality services to users but that this information, because it is specific to what the platform needs to improve its services, would be of little or no use to platforms offering competing but differentiated services?

219. Third, in relation to the previous set of questions, how can we measure the welfare implications of the fact that in a number of cases, access to more data (which comes with the size of the platform user base) also allows the platform to offer more targeted services to consumers?

220. Fourth, do mergers in the digital sector require a different approach to the assessment of potential competition than mergers in non-digital markets?

221. Fifth, what are, if any, the implications for innovation by platforms and by startups in the digital sector of attempts to extend the scope of merger control so as to catch "killer’s acquisitions?"

222. Whether we think that a specific regulation of the digital sector is necessary or not to complement competition law in order to tackle competition issues in the digital sector, we cannot avoid first resolving some of the analytical issues referred to earlier in order to inform our practice in competition law enforcement in the digital sector or determine our choice of regulatory framework for this sector.

223. Furthermore, if we think that there is a need for regulation, and given the complexities resulting both from the diversity of possible business models for platforms and from the large number of complex economic trade-offs between elements of performance of digital platforms, it is advisable to ensure that the regulation includes sufficient flexibility to allow the regulator a degree of freedom to tailor the obligations imposed on the platforms to their specific circumstances.
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