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Marc Bourreau[a] and Anne Perrot[b]

Digital Platforms: Regulate Before it's Too Late

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Digital platforms play an increasingly important role in our daily lives. We use them to move around, communicate, listen to music, watch films, work, manage one's business, and book holidays. They offer unprecedented economic opportunities and significant benefits to citizens, businesses, and the State. However, some digital platforms have gained considerable economic power, especially the largest of them, the GAFAM (Google, Apple, Facebook, Amazon and Microsoft), which raises concerns.

Economies of scale and network effects have favoured the emergence of these giant digital players and increased market concentration in digital or digitalised markets. Moreover, large digital companies tend to organise themselves in the form of conglomerates by developing new products or services in their ecosystems, and acquiring promising start-ups, reducing competition in the market. Their business models are specific, and technology and data exacerbate some anti-competitive practices that are well known and create new ones. Thus, some companies have become "structuring" platforms in their market and represent a challenge to competition policy.

Regulators face an important challenge to take effective action to ensure the competitive functioning of the markets where these platforms are active. The sanctions that are often imposed on them as a result of antitrust actions seem insufficient. This is why, in the public debate, the idea sometimes appears to structurally separate them, with the argument that they represent a risk for the economy and society. We consider that this must be a last resort solution, because its effects on competition are highly uncertain and its implementation would be extremely complex and costly. Nevertheless, public authorities must implement solutions to effectively regulate digital platforms, based on a detailed knowledge of the mechanisms specific to their operations. Thus, we recommend a European-wide overhaul of digital regulation centred on the control of technologies for collecting and using user data set up by the "structuring" platforms. We also recommend entrusting competition authorities with this new regulation's tools and powers.

Finally, we propose to empower users and consumers by allowing portability not only of data but also of identity to encourage migration to competing platforms and multi-homing. More transparency must also be imposed on the major digital firms by opening up application programming interfaces and involving citizens and experts in the experimentation and control of algorithms.

[a] Telecom Paris Tech, Institut polytechnique de Paris; [b] University Paris 1 Panthéon-Sorbonne, Member of the CAE.

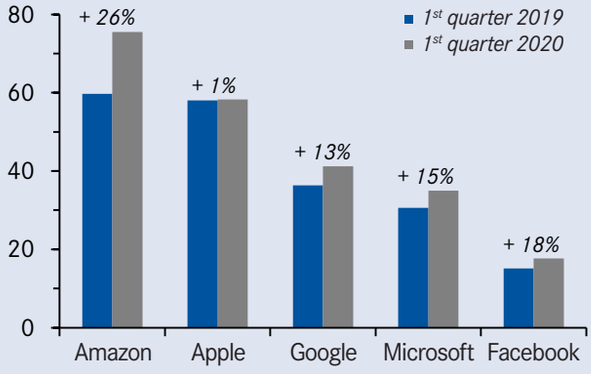
Introduction

The digital economy and the development of digital platforms have brought considerable benefits to society. Through these platforms, consumers can communicate with their loved ones, optimise their journeys, monitor their health and have access to many innovative services. The platforms also offer new opportunities for businesses, such as overcoming geographical distance or benefiting from efficient management services. Finally, public services also benefit from access to digital technologies to improve their productivity and accessibility. However, these benefits come along with counterparts. Digital giants are criticised for weakening traditional activities and shifting value chains in the creative sector. In addition, many are now concerned about the adverse effects of the market power of these giants, making it difficult for potential competition to emerge. Indeed, digital technology creates a natural tendency towards concentration. This is primarily the result of economies of scale in the production of digital products or services, an activity generally considered to have high fixed costs. A second source of concentration is related to network effects in the consumption of digital goods: consumers will be more attracted by a company providing access to a large network, which will further strengthen its market position. Economies of scale and network effects favour the concentration of digital markets, with at the very extreme the domination by one single firm (*winner-takes-all* phenomenon).[1] Added to this is the tendency of large digital companies to organise themselves in the form of conglomerates, such as the GAFAM (Google, Apple, Facebook, Amazon and Microsoft). These digital conglomerates expand by developing new products or services to be included in their ecosystem, but also by waves of promising start-ups acquisitions.

Digital technology is also at the origin of a "free constraint" that weighs in on the business model of new entrants to digital markets as most services accessible on the Internet are free, it is difficult to penetrate the market with a paying model. As a result, it is essential for players to have access to advertising revenue, but online advertising, which is now based on targeting individual behaviour, requires access to Internet users' browsing data, mainly in the hands of dominant players such as Google or Facebook.

The exceptional period of lockdown implemented to combat the spread of Sars-Covid-2 has revived the debates on the potential benefits and costs of digitisation. On the one hand, digital platforms provide indispensable tools for teleworking and social communication. On the other hand, there are concerns about a leap forward in the surveillance of individuals through the tracing of infected people and their relationships or about a reinforcement of the competitive advantage that the digital giants could gain from the health crisis. While many companies have suffered from the global pandemic, GAFAMs paradoxically increased their turnover in the first quarter of 2020 (see Figure 1).

1. GAFAM's revenues in the first quarter of 2019 and 2020, in billion of dollars



Reading: In the first quarter of 2020, Amazon's revenue was $75.5 billions compared to $59.7 in the first quarter of 2019, an increase of 26%.

Source: Statista, company reports.

In this *Note,* we will focus on economic regulation and primarily address concerns related to the size and market power of digital platforms, their impact on competition and on the functioning of markets. The growing importance of platforms is also giving rise to other important economic policy debates that previous work of the CAE already addressed. The *Note* on International Corporate Taxation[2] sets out the difficulties of a taxation regime in the current system, as it allows companies to locate their profits in countries where they are least taxed. The observation if not specific to digital platforms, but this possibility of optimisation concerns them primarily: the non-material nature of their service activity makes the reallocation of their sales in low tax countries easier for these firms. The main recommendation of the *Note* is to establish a minimum effective tax rate within the OECD. Recent empirical research suggests that the problem is not only fiscal, but also competitive, because tax avoidance strategies favour market concentration.[3]

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[1] Limits to concentration exist: consumers may have sufficiently varied tastes to allow small businesses to differentiate themselves from congestion effects and may also limit the advantage of size.

[2] Fuest C., M. Parenti and F. Toubal (2019): "International Corporate Taxation: What Reforms? What Impact?", *Note du CAE,* no 54, November.

[3] Martin J., M. Parenti and F. Toubal (2020): "Corporate Tax Avoidance and Industry Concentration", *CEPII Working Paper*, No. 2020-09, July.

The rise of "structuring" platforms

The "structuring" platforms and their business models

Platforms such as eBay, Doctolib and Airbnb provide very different services. However, they have in common is to be multi-sided platforms, i.e. intermediaries facilitating interactions between several groups of economic agents, characterised by the presence of significant network effects. While digital platforms all meet this general definition, there are great differences in their business models in practice. For example, transactional platforms differ from non-transactional platforms. The model of the first ones (e.g. Booking) is based on a remuneration by a percentage of the value of the transaction, which is impossible for non-transactional platforms (e.g. SeLoger.com), which must adopt other pricing strategies as the transactions initiated on the platform take place outside the platform. One can also classify platforms according to the nature of the service offered (see table), although many platforms combine several services, adapted to their different user groups. For example, the Google Search business model consists in providing a targeted audience to advertisers and offering to consumers a search service in order to attract this audience. Amazon also plays a similar role of infomediary through its recommendation system, although is not its primary function.

Since a few years, some platforms gradually became key players in the lives of both consumers and businesses, in particular because of strong network effects. This is to the point of becoming "structuring" players in the economy (see Box 1). For example, it is almost impossible for a hotel to run its business without any referencing on the Booking platform, because this is the way most consumers use to make a reservation (bottleneck effect). The Amazon Company, initially centred on the distribution of cultural products, offers now a wide variety of goods and services. Here again, for a small independent seller, it is difficult to give up the Amazon marketplace. Figure 2 presents the different markets where the GAFAMs are present, as well as their market shares.

1. "Structuring" digital platforms

In a recent communication, the French Competition Authority proposes a method to define so-called "structuring" platforms, i.e. platforms that hold considerable market power in the market in which they are mainly active, but also in neighbouring markets.[a] This method is based on the concept of "structuring" platforms. A "structuring" digital platform is defined by three cumulative elements:

- A company engaged in online intermediation for the purpose of exchanging, buying or selling goods, content or services;
- A company which holds a "structuring" market power –by virtue of its size, financial capacity, community of users and/or the data it holds– which enables it to control access or significantly affect the operation of the market(s) in which it operates;
- A company that plays a central role for market players, whether they are competitors, users of their services or third-party companies, who need to access the services offered by these "structuring" platforms to develop their own activities.

The Competition Authority considers as interesting to draw up a list of practices raising competition concerns specific to these players. The justification for such a list would lie in the fact that some practices have a multiplied anti-competitive effect in this context due to the significant market power held by their author.

[a] Competition Authority (2020): Contribution of the Competition Authority to the debate on competition policy and digital issues, February.

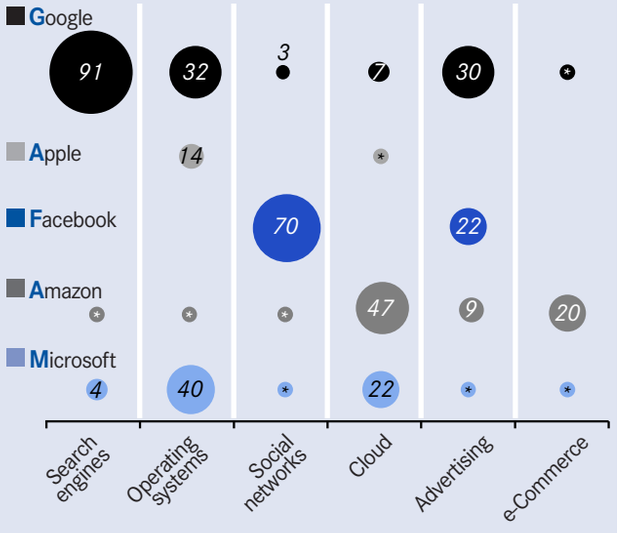
Each corporation is dominant in a sector, often linked to their market of origin: search engines for Google, operating systems for Microsoft, e-commerce for Amazon and social

The types of services offered by the platforms

Platform's type	Service offered	Examples
Exchange	Search, recommendation, booking and payment Matching et securing (trusted third party)	Amazon Marketplace, Airbnb, Uber
Software	Tools for developers, implementation of standards and interfaces to decrease apps development's costs	Game consoles (PlayStation, Xbox), operating systems (Windows, iOS), applications stores
Advertising-supported media	Connecting audience and advertisers (or content producers)	Online newspapers, specialised information websites, YouTube
Infomediary (production and management of knowledge)	Collection and agregation of data, pooling data, processing of data and information to generate new services	TripAdvisor, Yelp

Sources: Authors, based on Brousseau and Pénard (2007) and Evans and Schmalensee (2008).

2. Dominant positions and market shares of GAFAM (2019-2020), in %



Reading: A circle indicates the group's presence in the market segment in question. The size of the circle is proportional to the market share held by the platform in this segment, indicated by the number; * < 1.

Sources: Company reports. Search engines, operating systems and social networks (France): Stat Counter, January 2020; Cloud: InsiderInc (USA) from Goldman Sachs, 2019; e-commerce (France): Statista, 2019; Online advertising: Statista, 2019.

networks for Facebook. At the same time, they diversify their activities into a large number of other markets : Google takes part on a range of 28 activity sectors, from photo storage to autonomous cars.[4]

> **Observation 1.** Because of their size or bottleneck position, certain platforms with strong market power can be described as "structuring".

Beyond their common features, platforms adopt a variety of strategies to attract users and establish a sustainable business model. These strategies depend on the characteristics of their market. Some of these strategies are tariff-based, others non-tariff-based. Designing a pricing strategy is complex, as demand from different user groups depends both on the overall price level and on the price structure. Platforms set their prices on each side of their market, taking into account their costs, the price elasticity of each user group and the level of inter-group network effects. Frequently, it leads them to charge aggressive or even zero prices on some sides and higher prices on other sides.[5] For example, consumers do not pay to use Google's services, but advertisers are charged. Platforms also have to make a number of decisions that will affect interactions between users beyond the price structure. In particular, they need to decide how many different user groups to attract, what design to adopt for their service, what will affect the number and form of interactions and more generally how to regulate user participation and interactions. These decisions lead to trade-offs based on the congruence or the conflicts of interest between different user groups for a given decision. For example, for an advertising-supported content platform, a design that makes advertising more visible or facilitates tracking will satisfy advertisers but may repel consumers.

An important design choice concerns the search and recommendation tools. Many platforms provide tools offering to users a reduced selection from a very large number of theoretically possible interactions (relevant websites on a search engine, content on an online journal, a subset of products on an e-commerce site, etc.). This selection is of great value to consumers in a context of information profusion and attention scarcity. At first glance, platforms have a strong incentive to provide the best recommendation to their users in order to maximise their willingness to pay (in the form of money, time or data) and their loyalty to the platform in the long term. Nevertheless, other incentives may be at work: platforms can try to steer users towards interactions that are not optimal for them, but which prove more profitable for the platform, at least in the short term.

Platforms have the capacity to orient consumer choices. Behavioural studies show that the order in which the results of a query appear on a search engine determines how likely it is that Internet users click on a particular site.[6] Thus, the search for higher profit may lead to manipulation or bias in the results of queries or recommendations. This type of intermediation bias exists for hotel listings displayed on online travel agencies such as Booking or Expedia[7] or product listings promoted after a query by e-commerce sites such as Amazon. The intermediation bias is all the more problematic if the platform is vertically integrated, i.e. when it performs the function of an intermediary while at the same time supplying downstream products or services. The incentive for integrated platforms to direct consumers to its products or services, even if they are less relevant, to the detriment

[4] Evans D.S. (2017): *The Economy of Attention Markets*, Mimeo.

[5] See Rochet J-C. and J. Tirole (2003): "Platform Competition in Two-Sided Markets", *Journal of the European Economic Association*, vol. 1, pp. 990-1029.

[6] For example, a link downgraded from first to third place loses 50% of its traffic, see Athey S. (2013): *The Importance of Search Result Location*. Available at https://blogs.microsoft.com/on-the-issues/2013/03/26/the-importance-of-search-result-location/

[7] Hunold *et al*. (2018) showed that, all other things being equal, Booking and Expedia ranked more favourably the hotels that joined their partner programmes and agreed to pay a higher commission, see Hunold M., R. Kesler and U. Laitenberger (2020): "Hotel Rankings of Online Travel Agents, Channel Pricing and Consumer Protection", *Marketing Science*, vol. 39, no 1.

of downstream competition on the merits is a concern for competition authorities.[8]

Observation 2. Platforms adopt business models that include both price and non-price strategies. Their objective is to encourage interaction between users and to capture part of the value generated by these exchanges. However, a platform may decide to favour the interests of some users over others in order to capture more value.

The role of data

The platforms have access to large amounts of individual data on their users. Data can be provided voluntarily by consumers (by registering on the platform or by writing requests or messages), easily observable data (IP address, operating system of the device), or collected by tracking consumers on or off the platform (tracking cookies, etc.). Data plays a crucial role for digital companies. First of all, it represents an essential factor in production processes, to improve or personalise products for each consumer. Secondly, it enables the monetisation of audiences through targeted advertising using individual data. Data increases market concentration if a dominant platform strengthens its competitive advantage by improving its products at a rate that rivals cannot keep up. It has been suggested that data may be considered "essential facilities" *i.e.* "infrastructure necessary to reach customers or to enable competitors to operate". In competition law, this would imply that the data holder could be required to provide access to potential competitors. A joint study by the French and German competition authorities examined this issue in 2016. This analysis concluded that no digital player had been hindered from entering a market by lack of access to essential data so far, as each platform was able to rapidly build up the mass of data necessary for its business.[9] However, various more recent empirical studies show that there are significant economies of scale in the quality of demand predictions on e-commerce sites[10] or the relevance of search engine results,[11] thus providing a competitive advantage. Other studies also show that data collected in a primary market can allow a company to successfully expand into a secondary market.[12]

Observation 3. Data collected by the platforms can be a source of competitive advantage, favouring concentration.

A renewal of anti-competitive practices

Characterising barriers to development and killer acquisitions

It is sometimes argued that dominant positions in the digital economy are more fragile than in the traditional economy. The costs of entering digital markets are relatively low, particularly in terms of physical capital. In fact, start-ups have multiplied and their financing is increasing thanks to venture capital and public programmes, stimulating competition and innovation. Moreover, the ease of moving from one platform to another allows consumers to increase competition among platforms. As a result, a more efficient entrant can overthrow an established player –some previously dominant players have almost disappeared after the appearance of more innovative new entrants (Alta Vista, MySpace, Lycos etc.). This suggests that the dominant platforms today may be challenged and that their dominant position would only be transitory. Moreover, the taste for consumer variety and the risks of congestion allow the coexistence of competing platforms thanks to *multi-homing*. We observe, for example, oligopolies for meal delivery, scooter rental, *dating* services or cloud services platforms, where Amazon is a major player (Amazon Web Services), but also Microsoft with the Azure service (see Figure 2).

However, the low barriers to entry must be put into perspective. Although entry costs are low, the development prospects of a new entrant may be very limited in a market dominated by a platform already in place. Consumers may be reluctant to use the new player's services, faced with the costs of changing platforms (loss of service customisation) or the loss of the network of users with whom the consumer interacted. The limitations in terms of data portability and interoperability do not yet make it to solve these issues.

As noted above, the data can also provide a significant competitive advantage to the firms that hold them. For example, an incumbent firm that has exclusive access to

[8] These mechanisms were incriminated in the Google Shopping case, dealt with by the European Commission and resulting in a fine of 2.42 billion euros. The European Commission has also recently opened an investigation into Amazon on similar grounds.

[9] See Competition Authority and Bundeskartellamt (2016): *Competition Law and Data*, 10 May.

[10] See Bajari P., V. Chernozhukov, A. Hortaçsu and J. Suzuki (2019): "The Impact of Big Data on Firm Performance: An Empirical Investigation", *AEA Papers and Proceedings*, vol. 109, pp. 33-37.

[11] See Schaefer M., G. Sapi and S. Lorincz (2018): "The Effect of Big Data on Recommendation Quality. The Example of Internet Search", *DICE Discussion Paper*, no 284.

[12] See Hagiu A. and J. Wright (2020): *Data-Enabled Learning, Network Effects and Competitive Advantage*, Mimeo.

certain critical data may be able to maintain its dominant position even if faced with a more efficient new entrant. In other words, the competitive advantage conferred by individual consumer data would make competition for the market inoperative.[13] Empirically, it appears to be more attractive for the incumbent firm to use its data to try to build and maintain a competitive advantage rather than sell or license it for use and capture the added value brought by this new entrant.

Predatory behaviour on the part of major digital players can also take the form of killer acquisitions. These companies acquire a large number of innovative start-ups every year. It is difficult to prove that the acquisition of one company by another represents a threat for competition and to prove the intention of annihilating a potential competitor. Nevertheless, the most recent studies tend to show that such acquisitions raise competition concerns. First, many of these start-ups are absorbed without the innovation they carry being incorporated into the platform ecosystem. Second, when a dominant platform buys a start-up in an area of innovation, investment in that area rapidly decreases[14] and no competitive market really emerge. Finally, after the buyout of their start-up, it is rare that their creators are durably invested in the development of the platform.[15]

> **Observation 4.** "Structuring" platforms manage to protect themselves from the competition of new entrants through barriers to development and the use of killer acquisitions.

Anti-competitive practices, technologies and data

Even if they are not in a hegemonic position, platforms can roll unfair practices out towards consumers or their potential competitors. For example, platforms may introduce multiple intermediation biases (see *above*), distorting users' decisions and diminishing the ability of competition mechanisms to regulate the market. Another concern is the possibility of personalised prices, generated *through* algorithms and large amounts of data. Personalised prices are *a priori* neither beneficial nor detrimental to consumers –some consumers are likely to lose but others gain and the net effect is indeterminate. While the problem of price discrimination is not new, the growth of digital platforms exacerbated it by the development of new and powerful profiling methods. These personalised pricing practices are not considered anti-competitive *per se* but are analysed on a case-by-case basis. The practice becomes problematic if the data serve for exclusionary practices by rival companies.

> **Observation 5.** The use of technology and data by digital platforms is exacerbating some well-known anti-competitive practices and creating new ones.

Abuse of a dominant market position

The trend towards concentration of digital platforms may also give rise to competition concerns in the form of abuse of dominant position (see Box 2).

Some abuses arise from a dominant position in a single market, the one in which the platform conducts the bulk of its business. This is the case of "parity clauses" in the case of hotel reservation sites. Platforms imposed clauses on hotels prohibiting them charging lower prices on their website or on another platform (price parity) than those displayed or reserve certain types of rooms through other channels (availability parity). The platforms present these clauses as a way to avoid "*free riding*": customers would first check the reservation platforms before booking directly with the hotel or another platform to obtain a lower price. If generalised, such behaviour could destroy the economic model of these platforms. But implemented by "structuring" platforms in a position of bottleneck, they correspond to abuses of exploitation which make it possible to avoid any price competition and to prevent the arrival of new entrants who could penetrate the market by proposing lower prices. They were judged to be anti-competitive in the hotel reservation sector and are now prohibited. In other cases, however, several platforms compete with each other and are accessible to both sides of the market. For example, many drivers are attached to several platforms of transport services, and these platforms are put into competition by Internet users. This multi-homing situation is obviously favourable to competition and limits abusive exploitation behaviour.

Abuse of a dominant position may also occur because a platform is active on several markets at the same horizontal level such as several independent services provided to end consumers. This kind of situation happens even more among digital than physical players. This activity on several

[13] See Hagiu and Wright (2020), *op. cit*. See also Beuve J., M. Bourreau, M. Péron and A. Perrot (2020): "Plateformes numériques et pratiques anti-concurrentielles et déloyales", *Focus du CAE*, no 050-2020, October, for a more detailed analysis of the anti-competitive practices implemented by digital platforms.

[14] See Kamepalli S.K., R.G. Rajan and L. Zingales (2020): "Kill Zone", *Becker Friedman Institute Working Paper*, no 2020-19 and Gautier A. and J. Lamesch (2020): "Mergers in the Digital Economy", *CESifo Working Paper*, no 805.

[15] Ng W. and T. Stuart (2019): Acqu*ired: Retained orTurned Over?*, Mimeo.

2. Abuse of dominance and "effects-based" analysis

The competitive processes at work on the markets assume that the players compete "on the merits": innovation, lower costs, product differentiation, new business models are all instruments used by companies to conquer markets. The dominant position is often the result of efforts made: competition policy should not therefore discourage the search for a dominant position, otherwise the players will be given the wrong incentives.

However, once a dominant position is acquired, a company has access to new strategic opportunities that enable it to implement abusive behaviour that is punishable by law. A distinction is made between exploitative abuses and exclusionary abuses. The former allow the dominant company to raise its prices and increase its profits through the inability of consumers to switch to other products. The solution is for the authorities to ensure that there are not too many barriers to entry, so that new competitors enter the market. The main concern of the authorities is to detect and punish exclusionary abuses by which dominant companies prevent competitors from entering the market (predatory pricing, vertical foreclosure, tying sells, etc.).

The treatment of abuses of dominant position is complex due to the "effects-based" approach implemented by the competition authorities. This approach is based on the fact that many types of behaviour have pro-competitive justifications –search for efficiency gains, test of a new business model, etc. Consequently, these practices are subject to a case-by-case analysis that requires the often complex balancing of pro and anti-competitive arguments and is based on economic, theoretical and empirical analyses of the effects of the practices in question.

markets opens the door to tying strategies that exploit this configuration. These allow two types of market power to be exercised:

- A power to exploit consumer surplus (each basket of goods can be offered individually by making the best use of consumers' knowledge and their willingness to pay);
- An exclusionary power through the possibility of leveraging from a dominant market A into a market B on which the company wishes to evict competitor.

These practices are at the heart of the strategy implemented by Amazon in the form of the Amazon Prime offer. Subscribers to the service benefit from special price offers on goods other than those they initially purchase, such as access to a catalogue of films or music.[16] However, not all tying practices are necessarily anti-competitive. The analysis of this question refers to several factors such as the substitutable or complementary nature of the goods sold together, the extent of the discount resulting from the tied selling, the predatory or non-predatory nature of the prices offered, the ability of competitors on the secondary market to serve a substantial part of that market, etc.

Finally, "structuring" platforms are often located in vertically linked markets. A platform such as Amazon offers market place services (hosting services to merchants who are then the platform's "clients") but is also a distributor of products, and thus competes with its "client" merchants. This market structure may give rise to several types of competition concerns. Indeed, the "marketplace" platform has a privileged upstream position to observe the most demanded products, and then directly compete on the product as a downstream distributor. At the end, it can result in the eviction of some sellers. Another competition concern arising from these vertical structures is that linked to a "silo"-like competition between vertically integrated operators, offering at the same time a smartphone, an operating system, an application shop, content, etc. This configuration locks consumers into the ecosystem and prevents them from competing when they make their purchases. Competition is of course possible at the time of the initial smartphone purchase, but it is not certain that all the consequences of the choice are perfectly anticipated by buyers. The literature indicates that competition between vertically integrated structures can be more intense than if it took place on each floor but this is no longer the case when consumers have imperfect information leading to imperfect anticipation of their future purchases.

Observation 6. Each "structuring" platform can implement the different types of abuses of dominant position separately and simultaneously.

Towards *ex ante* regulation of information and data

Most of the digital platforms' anti-competitive practices are known and sanctioned by the competition authorities. However, the latter are sometimes powerless while facing innovative technologies, sophisticated practices among large scopes, but also facing new practices specific to the platforms. While concerns about the power of a few "structuring" players are widespread, the means to control it diverge. One can consider that as the biggest platforms are

[16] The Federal Trade Commission (FTC) in the United States opened an investigation into this practice in 2019.

active on the same markets, they compete with each other and, in some way, self-regulate themselves. Nonetheless, the observation of market shares (see Figure 2) suggests weak competition on each market, and a strengthening of the dominance in the sectors of origin. Similarly, these very large, mostly US-based players could compete with large Asian companies (the BATX : Baidu, Alibaba, Tencent and Xiaomi). One could therefore imagine that, following the example of physical goods markets, global competition between Western (GAFAM) and Chinese (BATX) platforms would gradually lead to a normal competitive process. This competition would be governed within the framework of the World Trade Organisation (WTO) by the principles of reciprocity prevailing in international trade. However, this reasoning assumes that the principle of reciprocity is at work in digital services, which is not the case in the current operating framework of the WTO. One could therefore push the idea of integrating these services into the international trade framework defined by the WTO. There might still be largely insufficient, because such a competitive process contains the risk of seeing one or two very large players emerge with a virtual monopoly. This would make any subsequent control even more difficult.

We chose to discuss two alternative options: the structural separation of these giants (very present in the public debate over the last few months) and the reinforcement of the power of control and regulation of the competition authorities in order to arm them to respond to the competitive challenges posed by the platform models. These options involve two mechanisms of constraints on the platforms and two different timeframes for public intervention. Indeed, the two mechanisms oppose structural constraints and behavioural constraints and the timing of intervention is different: regulation intervenes *ex ante* (upstream) and the action of competition authorities *ex post* (downstream).

Structural separation as a last resort

Structural constraints define the scope of activities that a company is allowed to serve. They can intervene *ex ante* and are therefore similar to a licence an actor would need to operate a particular activity. For example, the regulator could limit Amazon's perimeter to cultural goods or prohibit Facebook from issuing virtual currency. These structural constraints can also intervene *ex post,* in response to the implementation of anti-competitive behaviour. The divestiture of assets may be imposed on companies by a competition authority, but this is rare outside merger control issues. Again, this circumstance occurs mainly in the case of horizontal mergers, much more rarely in the case of conglomerate mergers through which companies expand their activities in several markets.

In the case of platforms, a separation outside the context of concentration could be justified by the ineffectiveness of the usual remedies, which are of a repressive (sanctions) or behavioural nature (injunctions to stop a practice). Such a decision would presuppose that the existence of anti-competitive behaviour has been proven.[17] In both Europe and the United States, the possibility of structural separation of major platforms is increasingly being raised. Some are calling for the reversal of mergers that they believe should not have been allowed. Others want to impose profound structural reforms on the operation of the major platforms, to consider them as "essential infrastructures", whose access and degree of vertical integration would therefore be controlled.

If such structural constraints applied to large platforms, they would have to balance the loss of efficiency associated with the separation against the expected competitive gain. Efficiency losses could result, for example, from the loss of certain data (lower efficiency of algorithms), from a reduction in economies of scale and scope, or, from a dynamic perspective, from a reduction in incentives to innovate. Consumers would also lose the benefit of using an ecosystem of products or services. Moreover, structural separation does not guarantee a competitive gain in all situations. For example, the economic literature on platforms has shown that prohibiting vertical integration between a search engine and a service provider does not necessarily reduce the search engine's incentives to bias the search results provided to consumers.[18]

Finally, structural separation is a complex procedure with uncertain results. In 1982, the incumbent telecommunications operator in the United States, AT&T, was split into several independent entities. This structural separation stimulated competition in the sector, but at the cost of a slowdown in innovation, which led the legislator to go backwards introducing the 1996 *Telecom Act*. The separation of Microsoft was also debated in the 2000s but the competition authorities abandoned it, mainly because the efficiency losses seemed greater than the expected competitive gains, in an environment where several technologies competing with Microsoft's seemed to be able to emerge.

Separation is legally possible at the European level in the case of digital companies. Nonetheless, we consider that if can only be justified if it proves to be the only remedy for certain abuses of dominant positions. They could be justified if the competition authorities were unable to observe the behaviour implemented by the platforms (opacity of software, difficulties in proving that such a practice is at work or not) and to qualify the practices in order to sanction them. In the absence of such justifications, the engineering of structural

[17] For example, in 2002, following the intervention of the Competition Council (now the Competition Authority), subsidiaries jointly owned by two water and sanitation operators were dismantled, because they reduced the competitive intensity in calls for tenders. However, these were single-product companies (resulting from mergers between two competitors) and not conglomerate companies.

[18] See de Cornière A. and G. Taylor (2014): "Integration and Search Engine Bias", *RAND Journal of Economics*, vol. 45, no 3, pp. 576-597.

separation risks to create more problems than it would solve. Other interventions, less radical and easier to implement, seem preferable to us. However, keeping the possibility of implementing a structural separation between different platforms' activities can represent a last resort instrument.

Recommendation 1. In view of the significant costs and risks that such a measure would represent and the complexity of its implementation, the structural separation of a digital firm can only be seen as a last resort solution to remedy proven abuses of a dominant position.

The benefits of *ex ante* regulation

One of the recurring questions regarding public intervention on digital platforms is whether such intervention should take the form of *ex ante* regulation, by prohibiting *a priori* certain behaviour in terms of pricing, market concentration or business model, or whether *ex post* control by competition law is sufficient, both in terms of its dissuasive and incentive nature and the sanctions imposed on offenders. One of the main arguments in favour of *ex ante* interventions is the length of certain proceedings before the competition authorities, due to the complexity of the practices to be analysed, which are not very much in line with the functioning of the market.[19]

Opposite arguments also hold. For example, the debate between the respective advantages of the two solutions is still not settled in the case of "killer acquisitions" that fall under the radar of the competition authorities because the turnover thresholds are not reached. *Ex ante* solutions that consist in lowering the thresholds or changing the nature of the thresholds to the acquisition value (as a high amount for a start-up without turnover could reflect a predatory intent) are not operative. Germany tested the first solution with the effect of a submersion of the competition authority with mergers without any competitive issues. The second solution has the disadvantage of introducing thresholds in merger control that are easy to manipulate. The *ex-post* solution, recommended in a previous *Note* [20] would consist in allowing the competition authority to deal with concentrations after they occurred if the authority considers it dubious and even if they did not require prior authorisation. It would mean treating such concentrations as abuses of a dominant position. However, this solution, which appears to be effective, seems to come up against legal obstacles. In the recent case of the takeover of a competitor by Télédiffusion de France (TDF), the authority concluded that it was unable to deal with the case under the current legal framework.[21] Faced with this dilemma, a third way would be to create a list of platforms whose behaviour would be subject to special treatment and control. It could include for example the declaration of any concentration regardless of its size. This mixed solution between *ex ante* regulation and *ex post* control is recommended by the French competition authority. It has the advantage of placing the listed platforms under the permanent watchful eye of the authorities and introduces asymmetric regulation. Nonetheless, there are some disadvantages, compared to a solution where behaviour is judged on a case-by-case basis. The definition of the list is a major difficulty. First, it would undoubtedly be the subject of intense lobbying actions. Secondly, if the list is too broad, the risk is high to embrace digital players who need bigger margin of manoeuvre. It the list is too narrow, it does not bring any improvement. Finally, it has the disadvantage of making it more difficult for large platforms to acquire innovative start-ups. However, such acquisitions are often the objective of start-ups : it represents a kind of return on the R&D efforts made without any turnover and without going through the development phase themselves.

If such a list becomes the preferred solution, its scope would have to be regularly reviewed at least, similarly to the telecommunications sector for which the list of markets subject to sector regulation changes as the competitive situation in the market evolves. However, one should be careful not to draw too many parallels between the regulation that would apply to platforms and the sectoral regulation of telecommunications, energy or audiovisual markets. Digital platforms operate in a wide variety of sectors and are not active in the same markets. If the authority regulates the entire relevant market each time a platform intervenes in it, limiting the scope of intervention of platforms and other "traditional" players, it would be equivalent to regulate the entire economy in the end. Nevertheless, the European observatory of platforms has a role in monitoring the digital sector and includes a section dedicated to the links between platforms and other companies. It should play an active role in detecting and transmitting to the Directorate-General for Competition potential identified cases.

A very high degree of generality in the implementation of an "*ex-ante* regulation of platforms" would not make much sense. Nevertheless, it appears that the data currently available on the major platforms constitute at least an asset for incumbent, if not an essential facility in the sense of competition law. Constrained by the free model (see above*),* new entrants cannot do without either to improve the operation of their service *via* machine learning or to obtain revenue through advertising: all new digital services need

[19] The most striking example of this disproportion between market time and procedural time is the Google Shopping case dealt with by the European Commission in 7 years, in the time most of the competing price comparators disappeared from the market.

[20] Jean. S, A. Perrot and T. Philippon (2019): "Competition and Trade: Which Policies for Europe", *Note du CAE* no 51, May

[21] See Decision 20-D-01 of the Competition Authority of 16 January 2020 on a practice implemented in the digital terrestrial television broadcasting sector.

access to large volumes of data. However, major platforms sometimes implement behaviours that modify access to this data by making it more difficult for third parties and disrupt the entire ecosystem by excluding some players from the market, even though they are performing well.

We can therefore imagine an *ex ante* regulation of this aspect of the platforms alone, transverse to all digital technologies. Its mission would be centred on monitoring the way in which data is collected and made accessible to third parties. It could have a monitoring mission on the technologies implemented by the "structuring" platforms. This regulator could thus ask the major platforms to report any changes in data collection technology (Chrome's announcement of the elimination of third-party cookies in 2022 is an example), and a study of the impact of the competitive consequences of this change could be carried out, subject to the right to a hearing. This would make it possible to implement a "*sunshine regulation"* that would avoid the difficulty of writing *ex ante* rules other than general rules on interoperability or the opening up of data. Technological changes could be subject to an experimental phase accompanied by the collection of the data needed for their evaluation before being authorised with or without adjustments, or prohibited.

Recommendation 2. Implement a digital regulation centred on the control of technologies adopted by the "structuring" platforms to collect and process users' data.

Regarding the governance of the regulator, several options are possible. Given their extensive expertise in the field of competition analysis, competition authorities are well placed to fulfil this role as data regulator. Another conceivable solution would be to create a European regulator in charge of data, able to monitor the behaviour of players, check that the general principles (openness of data, interoperability, etc.) are respected and, if necessary, analyse changes in the behaviour of platforms. This regulator could be endowed with the power to impose sanctions. This solution would permit to recruit from the outset the people competent to analyse these issues and would undoubtedly allow better consideration of objectives other than competition (protection of privacy for example). However, according to us, this solution seems less efficient than entrusting this regulation to the competition authorities (DG Competition, National Competition Authorities) and their network (the European Competition Network, ECN) equipped with new, more reactive and efficient tools. Indeed, most of the problems raised by these platforms are linked to the market power they have. It is true that the competition authorities intervene *ex post* (with the notable exception of merger control), whereas the aim here is to give them the tools to intervene *ex ante*. This regulatory function is therefore not part of their "DNA". DG Comp is advocating in this sense, with the implementation of the *New Competition Tool,* which includes many regulatory aspects. This option has many advantages and in particular the fact that competitive expertise, nowadays nourished by microeconomic methodology and sophisticated analytical tools, is the most necessary basis for a relevant control of market power.

Recommendation 3. Provide the European and national competition authorities with the relevant regulatory tools and entrust them with the regulation of digital platforms.

Promoting interoperability and data portability

We have observed that the presence of network effects creates the trend towards concentration. Despite this powerful dynamic and without cancel it, one way to stimulate competition between platforms would be to establish an "interconnection" between platforms, making it possible for a user to communicate or interact with users of any service or application. Interconnection allows competition in the market to take place, while maximising the benefits of network effects. As a precedent, the telecommunications sector is an industry where network interconnection has been successfully implemented, allowing competition to emerge between service providers within a single large network.

From an economic policy perspective, the choice of imposing interoperability measures or not means choosing between competition "for the market" and "on the market". In a nascent market, in the absence of any interconnection measures, strong "for the market" competition may be established between rival platforms, each of which will seek to develop their networks rapidly and extensively. Imposing interconnection at this stage would greatly reduce the competitive dynamic. Once the market has developed and begins to stabilise, interconnection measures can be used to organise competition "for the market". If the platforms are of similar size, they might see the benefit of interconnection on their own. On the other hand, if a dominant platform has emerged, it is likely to refuse interconnection with smaller platforms.[22] Regulatory measures imposing interconnection may then be necessary in the face of strong reticence from dominant platforms. For example, while it is possible to open a Word document on the Open Office suite of free software, the reverse is not true. In the field of professional video conferencing services, Zoom allows Skype for Business users to join a virtual meeting, but again the reverse is not possible. While the general principle of interoperability

[22] See Crémer J., P. Rey and J. Tirole (2000): "Connectivity in the Commercial Internet", *Journal of Industrial Economics*, vol. 48, pp. 433-472.

between platforms is fairly simple, its implementation is more complex. It is necessary to define a "standard" service, compatible and interoperable, between the different platforms that one wants to interconnect. Even if we restrict ourselves to apparently fairly simple digital services such as advanced communication services (WhatsApp, Instagram, etc.), defining a "standard" service is much more complicated, due to the high degree of heterogeneity, than in an already highly standardised industry such as telecommunications. By standardising the service, there is also a risk of reducing the incentives for players to innovate by introducing new functionalities.

Recommendation 4. Do not introduce an obligation for interoperability. Study requests for interoperability with "structuring" platforms on a case-by-case basis, when they could not be met through commercial agreements.

Another way of promoting competition "in the market" is to encourage consumer participation in several rival platforms (*multi-homing*), reducing the costs of migration from one network to another. This is the purpose of the right to data portability introduced in the General Data Protection Regulation (GDPR). In particular, Article 20 of the GDPR states that "Data subjects shall have the right to receive personal data relating to them which they have supplied to a controller (...) and shall have the right to transfer those data to another controller". A user of a social network can therefore request the transmission to her, or to another entity, of the information held by this network concerning her. In principle, this should reduce the costs of migration from one network to another and promote competition. However, portability does not imply interoperability: the services offered by the platforms are not standardised: the user is only able to export his data and possibly import them on other platforms if they allow it. Another important limitation of data portability is that it only concerns the user's own data and not data concerning other users to which he is connected. For example, for a LinkedIn user, the cost of migrating to another professional network is not limited to the loss of his personal profile, but also of the entire professional network he has built up and the information it contains. It would be preferable to implement "identity" portability rather than "data" portability, or to give the consumer ownership of all the digital connections she creates. Portability would then mean the possibility for the consumer to carry her "social graph" from one platform to another.[23]

Recommendation 5. Extend data portability to identity portability to facilitate migration towards competing platforms and multi-homing.

Transparency and loyalty

The production processes of the platforms rely heavily on algorithms, artificial intelligence and user data. This results in a strong technical dimension and great complexity. Moreover, these production processes or algorithms are regularly updated and improved by companies. Regulating the platforms is therefore also a technical challenge. It is imperative to strengthen the technical expertise of the competition authorities in the fields of information technologies and data sciences in particular. These "digital" teams from the competition authorities could, for example, ensure *ex ante* control of the fairness of algorithms. As it seems inefficient to try to understand algorithms where the share of non-explainable *machine learning* is significant, some encourage the use of experimentation for the regulator, on the same model the platforms themselves use for the improvement of their products and services.[24] These experiments conducted on the platforms could be carried out at the initiative of the authorities, but another, perhaps complementary, possibility could be to delegate control and experimentation to the "crowd". Imposing a certain level of openness on the dominant platforms, through standardised interfaces (the Application Programming Interfaces, API), would allow third-party players –academic researchers, non-governmental organisations, think tanks, etc.– to test the platforms' algorithms and doing so, participate to their control. The objective is to spotlight platform's practices to control their competition behaviours, and evaluate their efforts in terms of content regulation.

Recommendation 6. Strengthen the openness of dominant platforms through open programming interfaces (APIs). Encourage experimentation and crowd control of algorithms (academic researchers, non-governmental organisations, think tanks, etc.).

At this stage, two important thing need to be said. Frist, the degree of openness of these APIs has to be reasonable and proportional to the competitive issues. Those technologies are the results of intense R&D efforts and the regulation

[23] Zingales L. and G. Rolnik (2017): *A Way to Own Your Social-Media Data*, The New York Times, 30 June and Gans J. (2018): *Enhancing Competition with Data and Identity Portability*, The Hamilton Project, Policy Proposal 2018-10.

[24] See Feasey R. and K. Krämer (2019): *Implementing Effective Remedies for Anti-Competitive Intermediation Bias on Vertically Integrated Platforms*, Report for the Center on Regulation in Europe (CERRE), October.

should not discourage the innovation dynamic. Secondly, the obligations of transparency and fairness of algorithms must also apply to the public sphere, when it uses these technologies to make decisions that affect the lives of citizens. For example, allocation algorithms in higher education should be published, in an intelligible form, to allow monitoring of their loyalty and to build trust for their users.

Privacy and competition

This *Note* does not specifically address privacy issues. It should be noted, however, that some solutions recommended to protect privacy (such as restricting the use of cookies) may strengthen the market power of major platforms by encouraging the development of "logged environments", meaning application environment such as websites, mobile phone' apps where the user needs to be connected and identified to use the service. Generally speaking, any change in privacy protection measures should include an analysis of the incentives given to players and future digital regulation should also take into account the necessary trade-offs between the protection of privacy and personal data and the development of new services valued by users (Internet users and businesses). This remark reflects the interaction of the different forms of regulation when it comes to platforms. In the physical economy, competitive regulations and sector-related regulations have distinct objects and means of action that are very different from those required by the protection of privacy. For example, in the digital world, these regulations are closely nested and it is becoming essential to keep in mind their repercussions on aspects other than those directly targeted by regulation. This is yet another area where silo-thinking and compartmentalised actions are to be avoided!

Conclusion

"Structuring" digital platforms raise competition issues, exacerbating known anti-competitive practices and creating new ones. This *Note* suggests a possible way to remedy this, through digital regulation implemented by competition authorities.