

**Louvain School of Management  
And NOVA School of Business and Economics**

**The digital platform economy and its  
regulation at the European level**

An analysis of the implications for competition  
and innovation

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## **Abstract**

Digital markets have been characterized by major innovations that have reshaped the way we communicate, buy, socialize and do business. The market is worryingly dominated by a small number of players (GAFAM) and Europe is concerned about the market power of these companies. Therefore, the European Parliament has made a proposal for a regulatory framework. My objective is to understand how online platforms can be regulated from a competitive point of view, while addressing the risks in terms of innovation associated with this regulation. Through the collection of thoughts from experts, I attempt to build my own opinion on the best way to regulate the digital platform economy. Overall, I weigh the pros and cons and analyze the trade-off between competition and innovation.

*Throughout the writing of my thesis, I was supported by inspiring people who contributed to make this work qualitative, and of which I am proud.*

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## 1. Introduction

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### 1.1. Context

The fast and widespread elaboration and evolution of digital services has been, over the last two decades, at the core of the digital changes that have affected, mostly positively, our lives. New ways of shopping, communicating, and accessing information online have appeared and evolved at a quick pace, and Europe must ensure that legislation keeps track of the pace.

The digital single market is the strategy launched by the European Commission on 2015, May 6th. Overall, the Digital Single Market is about eradicating all transnational barriers for activity taking place online. The project is based on the concept of common market, designed to remove trade barriers between Member States to foster economic prosperity, and which later evolved into the internal market (1993, January 1st) guaranteeing the free movement of persons, services, and capital. While being underpinned by the same core principle, the digital version of the single market is intended to enable individuals and businesses to have access and engage in online activities. The challenge taken up here is to build the basis of a level playing field ensuring fair competition, and to ensure a high level of consumer and personal data protection, regardless of nationality or residence in Europe.

The rise of **digital platforms** at the beginning of the 21st century has delivered many advantages in Europe, allowing users and businesses to take full advantage of the technological advances of the internet. As is historically true in traditional economic markets, incumbents have been rewarded with the achievement of market power. The digital marketplace, however, with its different playing field, makes this power rather harmful, which raises legitimate concerns for competition authorities. Europe's digital landscape is now being held in the hands of a limited number of large non-European firms. Google, Facebook, Amazon, Apple and Microsoft, the so-called "Big Tech" companies, all dominate the global market in their respective business segments. Perhaps the most striking and powerful image is numbers ; to illustrate, Facebook has 3.5 billion users over its entire network, and Google holds more than 60 percent of the search engine market share in the United States and more than 90 percent in Europe, Brazil and India (Beard, 2021).

The world is getting more and more digitalized. Each digital wave is accompanied by political concerns such as data protection, tax evasion, illegal downloading, etc. A new economic model

is emerging, where competitive pressure, business models and company valuations are assessed on new grounds. Therefore, as the economic world undergoes transformations, public policies must be revamped. Across Europe, regulators are stepping up to curb the big U.S. tech giants, worried that they are wielding too much power over the more than 700 million citizens of the Union. A large number of proposals have been put forth, including subjecting them to more pervasive regulations, breaking them up, or being much more wary of mergers and acquisitions. Tim Wu, in his best-selling book on information-communication industries “The curse”, has, among others, mentioned his support for the breaking up of big tech monopolies, arguing that it would disperse their economic and political power, and address vertical as well as horizontal concerns of gatekeeping biases. Others suggest the regulation of those monopolies as public utilities, placing them under a duty to share their customer base, technical foundations, or be subject to obligations such as interoperability measures. Lastly, a ban or stricter control on mergers and acquisitions, perceived as a form of predatory conduct, appears as a straightforward solution to moderate the power of so-called gatekeepers (Petit, 2021). In sum, whatever the means, most economists agree that strict regulation must be implemented to limit capitalist abuses and protect the public from deep-rooted economic exploitation.

There is a urgent need to harmonize the rules if we want to continue to benefit from the advantages offered by the single market. Digitalization is not a matter that can be addressed by a single country, since the baseline principle of the single market is to remove barriers for people, goods, services and capital within Europe, and thus enable countries to cooperate for greater prosperity and welfare. The economy works well thanks to this progress, and the digitalization of the single market represent “only” the adaptation of the rules to the transformation that the markets are undergoing. In other words, European added value stems in fact from the homogeneity of the rules governing commercial relations, which are essential for the proper functioning of the digital single market. Member States individually cannot adequately seize the inherent transnational features of the problem (European Commission, 2018). Given the cross-border activity of large platforms, action at the EU level is preferred in terms of effectiveness of the rules and legal certainty. Divergent regulations between individual Member States hinders the effective provision of services throughout the EU and is incapable of safeguarding the protection of all European citizens. Action at the EU level would therefore reduce compliance costs, increase legal certainty, provide equal protection for EU citizens and a level playing field for businesses, facilitate effective cross-border supervision and, most importantly, strengthen the integrity of the European single market. (European Commission,

2015). This ambition is also critical to mitigate the current market fragmentation and pave the way for European companies to achieve the scale required to compete on a global level.

## **1.2. Research question – Problem setting**

As with any economic transformation, there will be winners and losers. The future of all stakeholders of the digital infrastructure depends on what is being decided currently. The outcome of the digital platform economy will be contingent on how policy makers intend to organize the market, encourage innovation and value creation, and how they address the tremendous opportunities generated by technological progress.

As Ms Vestager expressed; *“It is painful that in digital markets the harm that can be done in that marketplace can happen very fast but the recovery of that marketplace can be very, very difficult”*. Therefore, Europe has decided to take the lead in regulating the online realm. With the General Data Protection Regulation (GDPR) and the recently voted Digital Markets Act – which comes hand in hand with the Digital Services Act –, Europe has set the stage for other countries to establish the rules.

Nevertheless, Europe's approach to regulating the digital environment has raised concerns and questions about the risks that strict regulation could entail. Whether the concerns relate to the potential to impede innovation and value creation, or the potential to undermine competitive dynamics, there is an urgent need to analyze concerns in order to establish a framework that is as complete and relevant as possible. By analyzing all tools at hand, I will try to answer this thesis' research question :

*How can online platforms be regulated at the European level, while simultaneously addressing the concerns of competition and innovation?*

## **1.3. Expected contribution of the work**

The most interesting and challenging aspect of this thesis is the time frame in which I have written it. Indeed, from May 2021 until June 2022, a significant number of developments have taken place with regard to Europe's position towards the regulation of online platforms on its territory. As will be discussed in more detail in the literature review, the Parliament's proposal

for the DMA was submitted in December 2020, and discussions continued until March 24, 2022 to find an agreement on the principles and rules. As a result, much public discussion and debate took place during this period. On the one hand, it was extremely stimulating because at the time of submitting this project, the final text of the regulation has not yet been made public. Therefore, it provided me with a real opportunity to take on the position of a consultant for the European Commission in the writing of my research project. On the other hand, as the experts were constantly coming up with new ideas to contest what had been said, I was faced with a real difficulty, as the direction of this thesis kept changing over time. Throughout the writing of this project, I tried to keep my options open and to read what experts from different schools of thought were stating. This has allowed me, I believe and hope, to make the most objective analysis and diagnosis of the situation possible.

Far from presuming to propose a solution, I will explore and elaborate on the possibilities and tools available in an effort to provide as comprehensive an assessment as possible of the currently drafted proposition to regulate online platforms, as well as recommendations on how best to improve the legislation. Prior to this, I will lay the academic foundation upon which the analysis is based. My ultimate goal is to provide a discussion of methodologies on how best to regulate digital platforms, starting from the bottom up, i.e., using a key tool, namely past regulations, as inspiration. All this will be done through the prism of a trade-off between innovation and competition, in order to find the best balance.

#### **1.4. Methodology and Structure of the thesis**

To begin with, the thesis starts with a literature review, taking up the two central axes of my analysis; namely the relationship between innovation and competition, and digital platforms. The part devoted to the concepts of innovation and competition highlights the two opposing schools of thought, namely Arrow's and Schumpeter's. It will serve as a basis for assessing potential regulatory rules. The section on digital platforms attempts to summarize the main characteristics of these platforms, as well as to articulate more clearly the challenges and concerns they raise that call for regulatory intervention. This literature review concludes with an illustration of the information listed above, namely with the cases of Facebook, Amazon, Google, Apple and Microsoft.

The following section concerns the analysis part, aiming at understanding how to regulate in the most relevant way. To do this, I will begin with a comparison with other network industries, all of which seem to have in common the emergence of naturally emerging monopolies. This section will continue with a more comprehensive analysis of how these industries have been regulated in the past, with a particular focus on the telecommunications sector. Here I will try to understand the extent to which legislators can build on what has been established in the past. The next subchapter is regarded with the current regulatory proposal – the DMA. The purpose of this section is to provide an in-depth assessment of this scheme, with due consideration of its pro-competitive features, its anti-innovative features, as well as other comments that I have deemed relevant to include.

Finally, the issue of mergers and acquisitions forms the last part of the analysis. The reasons for its importance are listed in the subchapter. Reviewing the method of control at the European level, and discussing the effect of mergers and acquisitions on competition and innovation, this section concludes the analysis part of the research project. Within the scope of this chapter, a parallel was made with the pharmaceutical sector case.

After a careful analysis, I provide personal recommendations on how policy makers could further refine and improve the currently pursued regulatory approach. Ultimately, the paper ends with a conclusion, outlining the essential findings and insights of this work, as well as the limitations encountered in the writing and research phase of this thesis.

#### ***1.4.1. Data collection***

The research is conducted using both primary and secondary data. The primary data was collected through interviews and discussions with experts, while my secondary research was conducted through a wide range of resources that can be found in my bibliography - such as scientific articles, published reports, seminars, online discussion tables, official websites, and books. Specifically, in order to explore the research question, the thesis begins with an exploratory phase, citing the various literature reviews related to the field of study. In the second phase, face-to-face interviews were carried out in order to gather the ideas and opinions of experts in the research area. Since the topic has been very debated for the last 2 years, a vast number of interviews and public opinions are available on European platforms and agencies.

| Date of the interview       | Name of the interviewee | Current function of the interviewee   | Subject of the interview  |
|-----------------------------|-------------------------|---|---|
| April 1 <sup>st</sup> 2022  | <b>Paul Belleflamme</b> | Professor at UCLouvain and University of Namur  | Link between digital platforms and natural monopolies and interpretation of “killer acquisitions”                   |
| April 28 <sup>th</sup> 2022 | <b>Martin Peitz</b>     | - Professor at University of Mannheim<br><br>- Director of the Mannheim Centre for Competition and Innovation | Seminar on antitrust markets in the digital environment<br>+ questions about Schumpeterian theory and market power. |
| April 29 <sup>th</sup> 2022 | <b>Estelle Dierckx</b>  | Head of IT G2M EU & International Markets at UCB  | Discussion on innovation process and digitalization in the pharmaceutical industry.                                 |

**1.4.2. Choice of illustrative cases**

In order to give some context to my discussion, I used five cases of online platforms – Google, Amazon, Facebook, Apple and Microsoft – as illustrative tools. The reason behind these is simple; these companies are first and foremost among the Big Tech, also named GAFAM, and represent the most dominant and prestigious firms in the information technology industry of the United States – and worldwide.

Thereafter, I attempted to draw parallels with external cases such as the telecommunications sector and the pharmaceutical industry. The telecommunications sector was chosen for the straightforward rationale that it is the network industry that most closely resembles the digital platform industry. As for the pharmaceutical sector, its reference was not negligible given that the term "killer acquisition" on which I base a part of my study was initially coined in the context of an analysis of the pharmaceutical industry. These comparisons are made in order to support my arguments by basing them on concrete and relatable cases.

## 2. Literature review

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### 2.1. Digital platform economy

Online platforms have emerged and evolved rapidly over the last two decades and highly contributed to the digital economy. The pandemic has fast-tracked digitization at an unprecedented rate, enabling citizens to maneuver through their daily lives constantly challenged by recurrent lockdowns. Humans have had to reinvent their habits in every aspect of their private and professional lives. The coronavirus crisis has clearly been a fast-forward button, rather than a pause button, and it obviously accelerated our transformation from the off-line world to the online models (de Dorlodot, 2021). Online platforms, as diversified as the business models behind them, simplify more and more our interactions and undertakings. Consequently, the degree of dependence has, likewise, augmented. Whether it's accessing news, entertainment, communicating, working, expressing our opinions, finding jobs, housing and more, online platforms have revolutionized our way to do things. According to the European Commission, more than 10.000 online platforms operate on the European digital single market, while only a handful capture the majority of the value generated. They are major digital value maker and thus represent a prominent part in the future economic growth of Europe. In fact, between the January-October 2020 period, the total worth of the world's top 100 platforms increased by 40%, reaching a value of €10.5 trillion, and twelve European companies appear in the top 100. (European Commission, 2021). As such, they are of massive importance for the good functioning of EU and especially of the Digital Single Market. Online platforms are being developed in diverse shapes and sizes and have not stopped evolving at a pace never achieved in any other economic sector. Acting as innovation driver, online platforms' triumph is closely correlated to the success of the companies that use the services offered by them to reach their consumers. Moreover, these allow smaller firms to expand their operations to the entire Single Market in a way never possible before (European Commission, 2021). They provide numerous types of services, here are some of them ; online advertising platforms, marketplaces, search engines, social media and creative content outlets, application distribution platforms, communication services, payment systems, and platforms for the collaborative economy (European Commission, 2016). If we take a look at Amazon Business Program, it counts on its platforms 80+ customers on the Fortune 100 and more than 5 millions of businesses worldwide (Amazon, 2022). It is estimated that by 2040, 95% of total purchases

would take place online (Nasdaq, 2017). According to Facebook, its platform is being used by more than 200 million business users to connect with customers and grow.

Platforms, diverse in function and structure, are together rearranging a variety of markets, and predominantly value creation. The main advantage of platform-based companies rests on the trade-off between the practices adopted by those, and the operating rules of established businesses, which are designed to shelter customers, communities, workers and markets. We are in the midst of a rearrangement of an economy in which platform owners appear to be gaining a power that may exceed that of factory owners at the beginning of the industrial revolution (Kenney and Zysman, 2016).

### *2.1.1. Characteristics of online platforms*

#### *2.1.1.1. Economies of scale & Economies of scope*

A platform, and any company in general, enjoys **economies of scales** in situations where its long-term costs decrease as it expands output. Amazon is a great example of how economies of scale work, and this is due to the ton of items it sells. Its primary source of economies of scale arises from its capability to amortize its large upfront infrastructure implementation costs through its many different categories of operations and contracts, e.g. its size. Another outcome of economies of scale that Apple enjoys, for example, is its bargaining power with delivery companies. Indeed, a company like this one, which ships millions of packages a month, will easily be able to leverage its bargaining potential.

At the downstream level also, it is inevitable to agree on the fact that online platforms favor the growth of business users. This is only possible because of economies of scale (European Parliament, 2021). Indeed, once the digital business is established, the marginal costs of including users, for example, will be close to zero, and production costs will be less than proportional to the number of customers served (Parker, Petropoulos & Vas Alstyne, 2020). Indeed, if SMEs are not constrained by physical barriers to growth, it is because the marginal costs of including a seller or a buyer for example will be close to zero. For this reason, the very large online platforms should be rewarded for bearing the initial costs of hardware, software and marketing, which can be quite high (Büchel & Rusche, 2021). Benefits also apply to non-digital businesses when it comes to providing users with information about those firms, such as location, photos, reviews, payment systems, and so on. With this in mind, one can argue that online platforms allow, by connecting the whole population (sellers, developers, consumers), a

better competition between companies, with, as results: improved market efficiency, lower costs, and more innovation (Broadbent, 2020).

Additionally, **economies of scope** emerge as firms share and use their data to operate simultaneously across adjacent markets. Many digital platforms are active on several product/service markets, e.g. Google which operates as a search engine (Google Search), a navigation service (Google maps), a video service (Youtube), and many more. As a result, platforms can cut their costs and improve the quality of their services (Parliament, 2021). Google benefits of economies of scope because its total costs of producing its different products/services are lower than if multiple firms were producing these separately (Prince & Baye, 2020). Moreover, artificial intelligence and machine learning have further elevated the value of data to businesses, which can use it to reach out to new areas (Parker, Petropoulos & Vas Alstyne, 2020).

#### *2.1.1.2. Economic development*

According to the Organization of Economic Cooperation and Development (OECD), very large online platforms (VLOP) contribute significantly to GDP growth through broader access to national and international markets. Indeed, SMEs are now given the opportunity, with the aid of online platforms, to extend their business performance to foreign markets. Through providing an interface on which these businesses can reach consumers and gain an instantaneous online presence, SMEs are given the opportunity to expand their activities at lower costs of intermediation. More generally, the emergence of online platforms fosters economic development abroad (Broadbent, 2020). Whether it's the ability for consumers to browse any digital store at any time of the day or for businesses to advertise anywhere, digital marketplaces mark the end of time and space limitations (Danish consumer and competition authority, 2020).

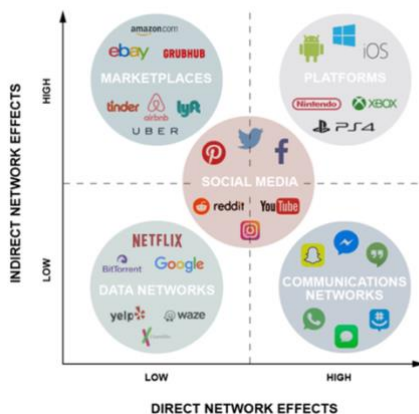
#### *2.1.1.3. Integrated ecosystems*

As the title suggests, digital platforms offer a space that integrates different parties and whose value creation is based on its ability to sustain an expanding network. Furthermore, they can be described as interconnected sets of offerings that generate value for users through an integrated experience. That said, the market definition exercise is challenged by the existence of distinct user groups and the linkages between different activities and services.

#### 2.1.1.4. Network effect

To continue with, the network effect is perhaps the most critical feature of digital platforms. In the presence of network effects, the value of user participation in platforms rises in proportion to the number of users. As for the countless benefits that online platforms are able to offer, the increase in choice/decrease in price for consumers, leading to enhanced competitiveness, in turn contributing to improving consumer welfare is one that is often highlighted. It is also a matter of facilitating the process for users by reducing frictions. As a result, consumers can buy, use or compare products and services much more easily and quickly than they could 15 years ago offline (Danish consumer and competition authority, 2020). Since the internet began to be widely accessible in 1994 (Stapp and Hagemann, 2018), value creation in the technological sector has been driven by companies whose business models are supported by network effects. There are two types of network effects, namely an indirect effect and a direct effect. The first refers to any situation in which a platform or service is composed of two or more groups, and as one group of users grows, the platform becomes more valuable to a complementary group of users. The second defines a situation in which the value of a service or platform increases as the number of users increases. (Stobierski, 2020).

Figure 1 : *Network effects*  
(Source: *European Commission, NFX, a16z*)



In what regards communication networks, their core purpose is to enable users to interact with one another, and therefore are the online platforms that have the clearest direct network effect. Marketplaces, on the contrary, experience important indirect network effects. Indeed, these platforms aim at allowing exchanges between distinct groups of users, while minimizing transaction costs. Social media combine the direct network effects of communication networks with the indirect network effects of marketplaces. In the right top corner of the map (Figure 1), platforms have both strong network effects. These are ecosystems for users and developers. Finally there are the data networks, which emerged through the collecting of large datasets, and in these platforms, a direct network effect is present (Stapp and Hagemann, 2018). From this perspective, it is quite explicit to understand to what extent platforms, whether they have a direct or indirect network effect, contribute to social and economic welfare.

This concept can be further illustrated using the feedback loop concept; the more users use Google search, the more data the platform will be able to collect to provide a better quality service through better performance of its algorithm. The second loop works the same way, except that this time the platform will monetize the data that it has accumulated, and it can use that money to make R&D investments to make further improvements of their service. It is a virtuous cycle.

#### *2.1.1.5. Multi-sidedness*

The model of digital platforms, which involves matching different kinds of users and treating them according to their type, is that of an old business model, adapted to reap the benefits of the digital capabilities. Indeed, if one remembers any old farmer's market, the value proposition of these was to bring buyers and sellers together in one place (Hoernig, 2021). Martin Peitz (2022) defines multi-sided platforms as those making proposals on each side on which it operates. Old versions of multi-sided services are for instance the radio or broadcast television. Perhaps the best-known type of multi-sided platforms is that of smartphones, which brings together users and software developers, supported by platforms such as Apple or Google. Online marketplaces such as Amazon are also a widely known form of multi-stakeholder platforms. Additionally, Martin Peitz portrays the advertising monetization process as an important multi-directional business model.

#### *2.1.1.6. Value creation*

Another feature that separates digital platform business models from traditional ones lies in the value creation process. Indeed, while traditional business models rely on the production of value-added products and services that are then delivered to consumers, platform-based business models allow users to create their own value. This is done via the infrastructure that is put in place by the platform and which enables interactions and transactions among users (van Gorp & de Bijl, 2019).

#### *2.1.1.7. Granularity of the market*

As Martin Peitz (2021) discussed in his seminar, in the digital landscape there is not only a geographic granularity, but also a sub-population granularity of users. These are priced and targeted separately and play different roles on platforms. If we take the example of social

networks, people from all over the world communicate and share. And while some users essentially just browse content, others post material. In addition, jobs such as influencers are created, and advertisers also play a major role. All in all, many actors from different backgrounds and with different behaviors interconnect, and make use of the platforms in very different ways.

#### *2.1.1.8. Data gatherer*

In what regards data, the platform serves as a data gatherer. Thereafter, these data can be used for internal, as well as external purposes. The internal usage corresponds to the utilization of data to improve the user's experience. On the other hand, external use refers to the utilization of data as a contribution of the company's revenue, through easing targeted advertisement campaigns for example (Batura, Van Gorp & Larouche, 2015). With respect to the use of data to generate profit, Facebook and Google have become the masters of data capitalism, amassing respectively 80% and 97% of their revenue from advertising. Widespread connectivity has been enabled by digital infrastructure through the sharing and use of data, linking products, individuals and organizations, all consuming and generating data. (European Parliament, 2021).

#### *2.1.1.9. Drives innovation*

Furthermore, digital platforms boost internal innovation on two levels : product development and business models. As far as product development is concerned, online platforms are progressively investing more in R&D compared to smaller firms, which is to be expected since successful innovation often involve upfront costs that smaller firms cannot afford. At a second level, innovation is also driven and conducted by the business customers of the platforms, and that is made possible thanks to the access to the tools and the market that the platforms provide. Regarding business models, these not only represent the most prominent piece of innovation but also radically change the way the industry operates (Broadbent, 2020).

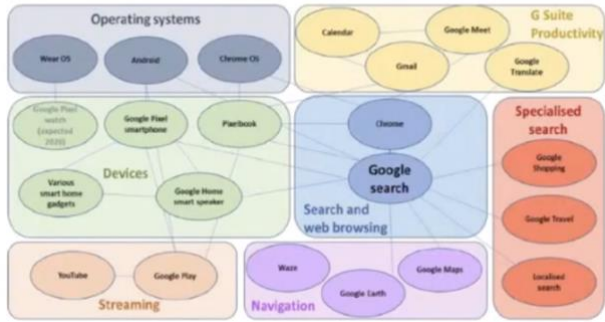
#### *2.1.1.10. Competition "In" and "For" the market*

Competition "in" the market relates to the rivalry between firms selling similar products/services. Competition "for" the market refers to bringing displacing technologies to a market and erect a new standard.

While many factors suggest that digital platforms are indeed doomed to achieve monopolistic positions in one market, they may also be found in a landscape where they face competitive

pressure from oligopolistic interaction in other markets. According to Nicolas Petit (2020), while Big Tech has, to date, achieved monopoly positions in their respective markets, they actually compete on other levels. First of all, they try to penetrate little by little the markets of other Big Tech companies, expanding their horizons and their value creation propositions. For example, Facebook did this by creating its "MarketPlace" service, challenging Amazon by entering the e-commerce market. Second, all these companies are actually competing with each other in other markets, such as online advertising. In other words, competition between digital monopolies is placed beyond the boundaries that reflect a market delimitation, which is centered around products/services substitutes (van Gorp & de Bijl, 2019). This can be, to a certain extent, regarded as multimarket competition, which is a term first coined by Corwin Edwards (1955), defining large conglomerates competing against each other simultaneously in distinct product or geographical areas.

Figure 2 : Google’s online consumer facing ecosystem  
(Source : CMA)



The digital world is made up of competing ecosystems. On the illustration (Figure 2), we can see that, as far as operating systems are concerned, Google owns Android, but Android is in direct competition with Apple's IOS. If we look at the streaming ecosystem, Google owns Youtube.

Nevertheless, Youtube is in direct competition with Netflix or Amazon Prime video on the streaming market. Finally, if we look at the navigation ecosystem, Google Earth and Google Maps are not alone in the market. Indeed, they are in close competition with the Plan App from Apple for example.

Competition between Big Tech clearly still takes place. If Google has managed to grow far beyond its initial business, it carries a long list of unsuccessful launches, from the Nexus smartphone to Google Glass. Its attempts to overtake its tech competitors have also failed, such as Google+, which was merely a brief challenger to Facebook, or Google Cloud, which remains far behind Microsoft's Azure in the battle against Amazon Web Services (Beard, 2021). These examples illustrate instances of symmetrical positions resulting from Big Tech's competition in diverse markets ; online advertising (Google and Facebook), cloud computing services (Google, Amazon, Microsoft), payment services (Apple, Facebook, Google) (Petit, 2021).

In the debate on competition "in" the market and "for" the market, the following applies: competition between Big Tech firms pushes them to innovate (Arrow), and in their home market they are also pushed to innovate in order not to be outperformed (Schumpeter).

### **2.1.2. Concerns**

As the European Commission describes them, digital platforms are key enablers of digital commerce. More than one million businesses in the Union trade through platforms, and it is estimated that about 60% of private consumption and 30% of public consumption of goods and services in the digital economy is done through online intermediaries. This growing intermediation, combined with powerful network effects, leads to an increased dependency of businesses and consumers on online platforms, which act as quasi "gatekeepers."

The fact is that some platforms have grown so large that they actually play the role of regulators, defining the conditions under which users interact. Parker, Van Alstyne and Choudary, in their book highlight this ; *"In the complexity of the governance issues they face, today's biggest platform businesses resemble nation-states. [...]Facebook oversees a 'population' larger than China's. Google handles 64 percent of the online searches in the U.S. and 90 percent of those in Europe, while Alibaba handles more than 1 trillion-yuan (162 billion US dollar) worth of transactions a year and accounts for 70 percent of all commercial shipments in China. Platform businesses at this scale control economic systems that are bigger than all but the biggest national economies"* (2016, p.159).

The emergence of the giant tech companies is well explained through economies of scale and network effects present in the digital sphere, which lead to concentration. Added to that, is the tendency of developing their business in the form of diversified conglomerates offering additional products and services included in the ecosystem. These practices not only lead them to (i) achieve a monopoly position, but also to (ii) buy up start-ups, which contributes to the reduction of potential competition (Bourreau & Perrot, 2020).

The following present the major concerns the European Commission has shared concerning gatekeepers, all of them sharing one common denominator : abuse of dominant position. The underlying problem is not bigness per se, rather it is the combination of size, concentration, market characteristics and incumbent-friendly regulation that raises concerns.

### 2.1.2.1. Dual role

The fact is that, since dominant platforms act as regulators, those have the responsibility to make sure that competition on their platform is fair and user-oriented. A concern expressed by competition authorities lies in the cases involving vertical integration. Indeed, by being vertically integrated, the platform becomes an active user of its own platform and is likely to hamper downstream competition by discriminating non-integrated services active on the platform (van Gorp & de Bijl, 2019). With respect to this, dominant platforms must not abuse its rule-making power to influence the outcome of competition. Two sub consequences are to be taken into consideration;

- ⇒ *Preferential treatment* : As online marketplaces may also be involved in providing products or services on the platform, how platforms will treat their own products/services, versus those of other providers, could be problematic. In response to that matter, some might argue that giving preferential treatments might sound like a legitimate reward for the running of the platform, whereas other will stand from an economic viewpoint and argue that when a dominant platform embarks on self-preferencing practices, the distorting effect on competition can be significant.
- ⇒ *Information asymmetry / Data privilege* : Transparency also plays a key role in the determination of regulation directed towards online platforms, and especially gatekeepers. This concept is particularly relevant in the specific case where companies collect data from transaction and use their data to fully meet consumers needs and regain an advantage over the competitors doing business on the same platforms. The threat is that gatekeepers may use sales volume and pricing data to further develop their own competing goods. Indeed, information asymmetry will undeniably hinder competition, and without any involvement of competition authorities, it will further accentuate the advantage of the host platform, to the detriment of others.

### 2.1.2.2. Winner-takes-all

The service of a platform, which is to connect two or more parties who were not previously connected due to high transaction costs, can be defined as one of ‘matchmaker’. Although positive outcomes generally predominate in assessing the impacts of network effects, a negative issue can also arise. Indeed, on a large scale, a strong network effect goes by definition hand in hand with the concentration of users on a single platform, which leads to a natural tendency for monopolies to form.

The digital landscape, and the demand-side economies of scale, makes a digital market tend to tip towards a winner-takes-all outcome. Platforms on which network effects are important are able to constitute high barriers to entry for new entrants, and therefore protect themselves from competition. Platforms, regardless of their business model, all follow the same pattern, which is to attract the attention of as many users as possible. On the downside; a monopoly position or oligopoly might restrain further innovative/entrepreneurial initiatives (Kenney & Zysman, 2016), and the tipping of the market may lead to economic dependency. A concrete example of market abuse is restriction access to a company's service to third-party app developers.

Another point that deserves the attention of regulators in the concept of dominance. The indicators used so far to determine which businesses are considered threatening are mostly static in nature, such as market shares for example. However, static indicators like these are less likely to be adequate when dealing with the market power of firms existing on digital markets. As Martin Peitz (2022) points out, the identification of distinct user groups and the interdependencies between different activities and services make it impossible to have a single market share metrics assessing the dominance of a platform. Attention must be paid to the degree of innovation, to the contestability of markets and entry barriers, as well as to the definition of relevant markets. Because of the specific characteristics of digital markets, it can sometimes be difficult to distinguish between legitimate behavior in relation to the relevant environment and anti-competitive practices. It is open to question whether companies are doing everything in their power to reach the highest point of innovation and thus provide more welfare to consumers, or whether they are trying to harm the competition and reap the maximum profits (Batura; Van Gorp; Larouche, 2015).

### *2.1.2.3. Killer acquisitions*

In the last decades we have witnessed a wave of mergers and acquisitions in the digital economy that have not gone unnoticed, e.g. Facebook/Whatsapp, Amazon/Walmart, and others. To date, Big Tech has acquired more than eight hundred firms, collectively (Witt, 2022). However, only a very small number of these have been subject to examination by competition agencies, and subsequently approved with few conditions. In fact, the authorities seem to pay too much attention to the impact of a merger on established competition, to the detriment of the impact on potential competition and innovation (Franck, Monti & de Streel, 2021).

To refresh one's knowledge, vertical mergers are defined as the combination of companies operating at different levels of the supply chain of a product. The main worry with vertical mergers is not that they lead to the accumulation of market power, as is the case with horizontal mergers, but rather that they lead to foreclosure and thus indirectly competitive issues. The risk arises from the firm's perverse incentives to exclude rival producers from its distribution network, and to withhold competitors' products on their platform. By contrast, since vertical integration results in the combination of complementary assets, it supports high degrees of efficiency, which is indisputable (U.S. Department of Justice, 1984). The AT&T deal with Time Warner (TW) is a useful illustration to relate to the digital landscape, bringing together a telecommunications giant and one of the world's largest media companies. The theory of harm advanced by the DOJ was based on their ability to charge higher prices and gain substantial market power. In digital markets, Amazon's \$13.7 billion acquisition of Whole Foods is analogous. Customer foreclosure, leading to unfair market power, emerged as the primary concern, in addition to the risk of other downstream producers being discriminated against on the platform as Amazon favored its own products.

On the other hand, mergers are horizontal if they take place between competing firms, i.e. firms operating in the same geographic and product/service market. Again, this type of merger and acquisition deserves close scrutiny, as it may create a monopoly that would be competitively undesirable. Contrary to vertical mergers, horizontal ones raise immediate competitive concerns because they involve direct competitors. However, like vertical integration, they can contribute to a company acquiring additional knowledge and expertise, resulting in added value for users. Probably the most emblematic horizontal merger conducted by Facebook was its acquisition of this "then"-competitor Instagram, which operated in the same social media industry and which shared similar features in their photo-sharing services. Facebook is believed to have done so in order to lower competition and increase access to new audiences.

The first theory of harm emerging from mergers and acquisitions in the landscape of digital platforms revolves around the term "**killer acquisition.**" This concept can be defined by situations in which gatekeepers may have the ultimate goal of ending the small business by not developing its value proposition, resulting in the destruction of the competitive threat. In this case, acquisitions are defined as "killer acquisitions" because the acquirer ends the target's innovation and prevents future competition. The rationale for buying and terminating development is twofold: the incumbent may find it more profitable to purchase the business

than to suffer a loss of revenue due to the competitive threat, and second, it protects the firm from the risk of cannibalization of its own sales (Capobianco, 2020). Another name used to describe the situation is “nascent potential competitor acquisition” theory of harm (OECD, 2020).

*Case : Killer acquisitions in the Pharmaceutical industry*

The term was advanced by Cunningham et al. (2020) who demonstrated that, in the pharmaceutical industry, innovative drug projects acquired by incumbent companies are less prone to continue in cases where the new project overlaps with the established company's drug portfolio. According to the authors, 6% of acquisitions in the pharmaceutical industry fall into that category. As with takeovers of digital companies, the notification threshold allows these acquisitions to be overlooked and thus exempt from antitrust examination. While paralleling the pharmaceutical and digital industries, there are some inherent differences that need to be considered, such as the structure of the pharmaceutical industry being much more transparent and regulated, or its better information flow (Dierckx, 2022). This is due to the strong regulation of drug development notably, which provides information to the authorities regarding the products, as well as the agreements made for the production, distribution or patent protection. Comparatively, the digital sector presents more obstacles to assessing harmful mergers and acquisitions. Significant information asymmetry alters the process, as dominant platforms withhold a great deal of information, leaving the authorities charged with assessing the impact of M&A unable and ill-informed.

The second theory of harm relates to the dominance of large technology companies – often achieved through M&A –, which create a “**kill zone**” effect. This refers to areas of the market where other companies do not want to invest. This phenomenon is due to the prospective acquisition of any potential competitor by large technology companies, which disincentivizes others from investing and entering the market. In turn, this has an effect on innovation, which is prevented from serving as a competitive threat. In other words, once a large technology firm has acquired a smaller firm in an adjacent, complementary, or related market, not only will SMEs be deterred from competing with the established giants, but this will create a first-mover advantage, affecting the incentives for competition (Parker, Petropoulos & Van Alstyne, 2021).

As illustrated in the next section; whether it involves adding complementary functionalities, entering a new geographic or adjacent market, or eliminating competitors to secure a position in a specific market, mergers and acquisitions are at the heart of Big Tech companies' strategies, and explicitly account for their seemingly uncontainable ascension. It also provides examples of platforms that have, in some way, abused their dominant position – acquired by artificial

growth, i.e. mergers and acquisitions. Let's take a closer look at these examples to understand more in depth what was presented hereabove.

#### *2.1.2.4. Concluding remarks*

In digital markets, competition authorities face difficulties with respect to the application of their duties. Four main challenges can be identified in this connection: (i) the definition of the relevant market, (ii) the assessment of market power, (iii) the assessment of the anti-competitive conduct, (iv) the slow pace of ex-post enforcement response, which is not adapted to a rapidly changing market, and (v) the monitoring of mergers that are not notifiable under EU law.

### 2.1.3. Cases : Big Tech firms under EU' scrutiny

#### Case : Amazon

On the 17<sup>th</sup> of July 2019, the European Commission opened investigations into potential anti-competitive conduct of Amazon. Indeed, the tech giant is under investigation regarding its use of data from independent third-party vendors that participate in its marketplace. Margrethe Vestager, who is responsible for competition policy, opened the investigation on this ground : *“European consumers are increasingly shopping online. E-commerce has boosted retail competition and brought more choice and better prices. We need to ensure that large online platforms don't eliminate these benefits through anti-competitive behaviour. I have therefore decided to take a very close look at Amazon's business practices and its dual role as marketplace and retailer, to assess its compliance with EU competition rules.”* The fear comes from the fact that Amazon plays a dual role on its platform and there would have **data privilege**: it provides sellers with a marketplace where they can sell their products/services and it simultaneously participates in the sale of its own offerings on its website, as a retailer. But as marketplace provider, Amazon is able to continuously collect data about sellers and their transactions on the platform, and use those to calibrate their offerings and strategic business decisions at the expense of the other marketplace retailers (European Commission, 2019). The Commission will first analyze the standard agreements between Amazon and the third-party sellers, and assess whether or not the collection of such data affect competition. Second, it will take a look at the role of data in selecting the winners of the “Buy Box”<sup>1</sup>. The purpose of the research is to determine whether such practices are indeed a breach of the EU competition rules on anti-competitive agreements between companies (Art 101 TFUE) and on the abuse of dominant position (Art 102 TFUE).

The Commission has opened a second formal antitrust investigation into the possible **preferential treatment** of Amazon's own offerings (European Commission, 2020). Margrethe Vestager summarizes well the situation : *“We must ensure that dual role platforms with market power, such as Amazon, do not distort competition. [...] Its rules should not artificially favour Amazon's own retail offers or advantage the offers of retailers using Amazon's logistics and delivery services. With e-commerce booming, and Amazon being the leading e-commerce platform, a fair and undistorted access to consumers online is important for all sellers.”* It is a difficult matter because, as the giant tech company mentioned, Amazon clearly has paved the way for many small vendors to have a presence on the online market and reach many more consumers ; *“No company cares more about small businesses or has done more to support them over the past two decades than Amazon”* (Amazon, 2020). The company also noted that the platform allows more than 150.000

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<sup>1</sup> Winning the “Buy Box” (i.e. being chosen as the offer that features in this box) is crucial to marketplace sellers as the Buy Box prominently shows the offer of one single seller for a chosen product on Amazon's marketplaces, and generates the vast majority of all sales (European Commission, 2020)

European businesses to sell on its marketplace, probably with the intent to express that Amazon contributes to the European economic performance.

On 9 December of last year, the Italian antitrust agency resolved to punish Amazon with a fine of €1.128 billion for abusing its dominant position in the Italian e-commerce market and specifically favoring its own logistics system, namely “Fulfillment by Amazon”, which provides storage, packaging, and shipping assistance to sellers (BBC News, 2021). This appears to have harmed other Italian e-commerce logistics service providers, as well as competitors in the Italian intermediation services market (Zampa, Spinelli & Casiraghi, 2021). Amazon judges the fine unjustified and disproportionate, therefore claimed that were going to appeal against the decision. On the other hand, the European Commission expressed its satisfaction with this statement and underlined the close and effective cooperation between the European Commission and a national (Italian) authority to conduct a separate investigation into this case already under EU supervision. (BBC News, 2021).

As far as **M&A** are concerned, its earliest acquisitions were intended to expand geographically. Amazon, which first established as an online retailer, acquired other online retailers specializing in a wide range of products and tools, benefiting from the purchased company's functionality and customer database. In addition, Amazon's deals allowed it to more closely track user response to its products and services, and made the monetization process more efficient. As of 2006, the online retailer expanded its buyouts beyond its core business, acquiring companies related to web services or entertainment media. More recently, Amazon has further expanded its range of businesses by investing in artificial intelligence companies and robotics systems. In terms of the company's most expensive acquisitions, Whole Foods Market in 2017 and Pillback in 2018 were valuable in bringing new capabilities or markets to its business model (Parker, Petropoulos & Van Alstyne, 2021).

#### Case :\_Google

Google, the world’s largest search engine, has been fined €9 billion in three separate competition cases in Europe, which Google has appealed.

The first one dates back from 2017 and is concerned with shopping comparison. The fine amounts to €2.4 billion and the Commission is accusing the company to **treat with favor** its own shopping comparison product over competitors’. The second file is about Android and occurred in July 2018; the fine is of €5 billion and the motive was that Google, using its **dominant positions’ bargaining power**, was blocking cell phone manufacturers from setting up competing search engines and browsers. Thirdly, the last investigation resulted in a fine of €1.7 billion and was issued in March 2019. There, the Commission's objections focused on exclusivity agreements that Google allegedly entered into with publishers using its AdSense tool, which prevented them from serving ads from its competitors (Feiner, 2020).

As far as the Google Shopping case that was settled on November 10, 2021, the Commission’s concern was that the company used its dominant position in the search market

to exclude rivals from competition, especially in the comparison shopping market. The Commission proved that Google was discriminating its rivals in the positioning and display of results, in **favor of its own comparison shopping service**. Specifically, the General Court's decision is based on two constituent acts of abuse: Google promoted its specialized search service and demoted that of its rivals. The Court confirmed the EC's findings that this behavior increased traffic to Google's own comparison service at the expense of its competitors, and fined the search engine giant €2.4 billion (Monti, 2021).

Google's ad sales trading business is one complex area of interest for regulators. Regarding the specific case, the French competition authority suspected that the firms' advertising server (DoubleClick for Publishers) had given Google's online auction house (AdX) a lead in advertising auction, notably by collecting information about other players bids – **data privilege**. Publishers and rivals in the advertising industry have long complained about Google owning some of the most utilized tools for buying, selling and auctioning ads. They have also blamed the company for both owning and operating its own ad-funded products arguing that this leads to conflicts of interest that hamper competition in the online advertising business.

On June 7th 2021, Google settled the antitrust case. The company agreed to pay a fine of 220 million euros, settling the investigations and potentially redefining relationships between tech giants and digital publishers. Google agreed on certain commitments to settle the case, such as : *“We're committed to working collaboratively with regulators and investing in new products and technologies that give publishers more choice and better results when using our platforms”* (Gomri, 2021). Even though commitments are only binding in France, it is probably going to serve as a model for other countries, or Europe, to deal with antitrust cases such like that. At the moment, Google is subject to several antitrust lawsuits in the United States, including one initiated by the federal government, which accuses it of **illegally monopolizing** the online search and search-related advertising markets (Ziady, 2021).

Since its foundation in 1998, Google has taken its business far beyond its core activity of online search. Indeed, its **M&A** journey has allowed the firm to grow and play in many additional industries such as advertising, mobility, hardware, or artificial intelligence. Having acquired more than 230 companies to date, its biggest acquisition was Motorola Mobility, which it bought for \$12.5 billion. Other significant buyouts that enabled the company to broaden its business scope were Youtube in 2005, Double Click and Waze in 2007, Nest in 2014, or even Looker in 2019 (Cattlin, 2021).

#### Case : Facebook

The European Commission has opened a formal antitrust investigation into Facebook's gathering of data in particular from advertisers, in order to compete with them in markets where Facebook is present. The investigation will assess if the US giant tech company's conduct represents a breach to EU competition rules. In addition, the investigation will also determine whether Facebook is linking its online classified service "Facebook Marketplace",

introduced in 2016, to its social network in violation of EU competition rules (European Commission, 2021). Margrethe Vestager (2021), Executive Vice-President in charge of competition policy, stated : *“Facebook is used by almost 3 billion people on a monthly basis and almost 7 million firms advertise on Facebook in total. Facebook collects vast troves of data on the activities of users of its social network and beyond, enabling it to target specific customer groups. We will look in detail at whether this data gives Facebook an undue competitive advantage in particular on the online classified ads sector, where people buy and sell goods every day, and where Facebook also competes with companies from which it collects data. In today's digital economy, data should not be used in ways that distort competition”*.

In addition to being an online platform allowing registered users to create profiles, upload photos and videos, and interact with other users, the online platform offers an online classified service - Marketplace. On this service, users can post for sale and buy goods from each other. Like Amazon, Facebook is able to **collect commercially valuable data** – such as click-through and conversion rates – on its rivals about their advertising services when they run ads on the platform. The American giant can then use this information provided by challengers to outcompete them on Facebook Marketplace (Scott Morton and Dinielli, 2021). The UK Competition and Markets Authority (CMA) also initiated its own probe into Facebook's data use. The European Commission will seek to work hand-in-hand with the CMA as the separate investigations progress. Britain is also investigating into Facebook Dating, which is service introduces in Europe in 2020. As part of the UK investigation, the CMA will also look at the use of the log-in function that allows users to access website via their Facebook profile. That utility certainly has allowed the Tech company to have access to **privileged data** (Van Dorpe, 2021).

Facebook sued the European Commission in 2020 over demands made by regulators to provide data and documents. Facebook claimed to have disclosed more than one million documents concerning the marketplace (Satariano, 2021).

The institution will also examine whether the way Facebook Marketplace is integrated with the social network creates a form of tied selling that gives it an edge in reaching customers and excludes competing online classified services. Indeed, the European Commission has already observed that this practice of **bundling** gave a competitive advantage to Google, which had pre-installed apps on cell phones equipped with the Android operating system (Van Dorpe, 2021). Fiona M. Scott and David C. Dinielli (2021) explain that Facebook collects large troves of data based on users' interactions with its own platform as well as user activities outside of the platform that Facebook tracks, such as location and purchases. Publishers/Content providers represent horizontal rivals to Facebook in the market for the distribution of advertising space. Through its monopolistic position as gateway, Facebook retains 27% of ad expenditures for ads placed on websites when users access them via a Facebook publication.

The most recently established of the three companies analyzed – Facebook – embarked on its **M&A** strategy with the specific goal of creating a user-friendly social networking

experience, such as features that facilitate online messaging, photo sharing, storytelling, event planning, and so on. Further acquisitions were more oriented towards the monetization feature through targeted advertising methods. More recently, Facebook's takeovers have involved companies specializing in virtual and augmented reality, artificial intelligence and machine learning. Finally, it's easy to recognize that, when considering the company's most expensive acquisitions, namely Instagram and WhatsApp, its M&A activity has been motivated to some extent by the platform's competitive preoccupations.

### Case : Apple

In June 2020, the European Commission has opened formal antitrust investigations with regards to Apple's rules for app developers on the distribution of apps via the App Store. The Commission looks into whether "the mandatory use of Apple's own proprietary in-app purchase system and restrictions on the ability of developers to inform iPhone and iPad users of alternative cheaper purchasing possibilities outside of apps" (European Commission, 2020), constitute a violation of the EU competition rules. According to Margarethe Vestager, Apple has gained a dominant position which allows it to set the rules for the distribution of apps to users, and we must make sure that the company is not distorting competition in markets where Apple compete against other app developers such as music streaming services.

In parallel, the European Commission (2020) has opened another formal antitrust investigation to determine whether Apple's behavior related to its Apple Pay service is abusive. The investigation is being examined from three angles: (i) the conditions imposed by Apple in merchants apps and websites on iPhones, (ii) Apple's limitation of the Near Field Communication ("tap and go") feature on iPhones to its own service, and (iii) the alleged **restrictions of access** to Apple Pay for products of rivals.

The European Commission's preliminary view (2022) is that Apple is abusing its dominant position on its iOS operating system to restrict competition. Apple's terms and conditions could create exclusionary effects on rivals, which could distort competition, and reduce consumer choice and innovation.

As far as **M&A** goes, Apple CEO Tim Cook stated that the company has acquired more or less 100 companies over the past six years. The majority of these acquisitions were of very small size companies. Indeed, while Big Tech rivals have typically entered into multibillion-dollar deals with established players, Apple is pursuing a different strategy. The company sets itself apart when it comes to M&A strategy, focusing instead on acquiring talented tech personnel. Indeed, Apple has used acquisitions to expand its business in areas where it needs technical talent or specific technology. An example of this is the acquisition of AuthenTec in 2012, which accelerated the iPhone's fingerprint scanner (Leswing, 2021).

### Case : Microsoft

Microsoft's history with antitrust authorities began as early as 1991 in the United States, when the Federal Trade Commission accused the technology giant of abusing its monopoly power in the PC operating system market. The Department of Justice also launched investigations at the same time, accusing the U.S. software company Microsoft Corporation of tying other products to the Windows operating system (OS), such as its Internet Explorer and the Windows OS. The European Commission quickly followed the investigation path, and issued a statement of objections in 2001 regarding its conduct in deliberately **restricting interoperability** between its operating system and non-Microsoft work group server operating systems and in **tying** its Windows Media Player to its Windows operating system. The EC considered that Microsoft's conduct significantly weakened competition in these markets and enabled it to acquire a dominant position. Furthermore, the institution deemed that these abuses have acted as a brake on innovation and competition and have left consumers with less choice. In 2004, the Commission concluded the case and imposed behavioral remedies and a fine of €497 million (European Commission, 2004).

Later, in 2013, the European Commission issued a press release stating that it had fined Microsoft for failing to meet browser choice commitments. While the Commission had made binding commitments in 2009 (until 2014) to allow users to choose their preferred browser in an informed and unbiased manner, Microsoft did not deploy the browser choice screen with its Windows 7 Service Pack 1 in 2011 and 2012; resulting in a fine of €561 million (European Commission, 2013).

Recently, the U.S. company was targeted by three European rivals, who complained to the European Union's competition watchdog. The case alleges that Microsoft's business practices and conduct, such as the way it licenses its products, unfairly discriminate against competitors when it comes to its cloud computing service. One of the rivals - OVHcloud (OVH.PA) - said Microsoft was undermining fair competition and limiting consumer choice in the market for cloud computing services (Reuters, 2022).

Microsoft's **M&A** strategy of spending tens of billions of dollars on acquisitions differs slightly from that of other large global technology companies, in terms of the scale of takeovers particularly. Apple, Amazon, Google, and Facebook, aware of the scrutiny they face when engaging in M&A transactions, are cautiously proceeding with large buyouts. Somehow, Microsoft has been avoiding the same degree of scrutiny (Sherman, 2021). Microsoft's biggest acquisition ever took place in January 2022. It constitutes a \$69 Billion deal, in which it acquired Activision Blizzard, with the clear ambition to become a titan in the world of gaming. According to Dowd (2022), a Forbes staff, this is likely to draw the attention of antitrust regulators, given the sizes of both companies. It beats by a great margin its previous biggest acquisition, which was its \$26.2 billion takeover of LinkedIn in 2016.

## 2.2. Relationship between competition and innovation

There is a broad understanding among economists that research and development are a foremost source of economic growth. As a general assertion, the incentive to innovate represents the difference in profit that a company can earn in investing in R&D compared to what it would have earned if it did not invest.

The European Commission describes the term innovation as a notion that can be depicted in three parameters. As a first category, the invention can manifest itself in two ways ; **product** innovation and **process** innovation. While the product innovation corresponds to the formation of new products/services or the improvement of these, the process innovation is intended to lower the cost of producing a product/service or improve the production/delivery of the latter (Gilbert, 2006). Secondly, is to be mentioned the difference between an **incremental** innovation, which describes a minor step forward, in comparison to the **breakthrough** innovation which marks a significant technological jump, leading to a change of technological paradigm. In this respect, the qualification of the innovation is considered in relation with the prior state of the art. Thirdly and lastly, the difference between a **sustaining** innovation and a **disruptive** one lies in the fact that the former occurs within the value network of the established firm, whereas the latter takes place outside that value network, displaces it and offers a whole new set of features.

### 2.2.1. Arrow - “Product market competition spurs innovation”

The Commission states<sup>2</sup> the belief that more competition leads to more innovation. Indeed, one could expect competition to be a driver of innovation for firms in order to survive in the competitive market. According to the Competition Authority, competition is a stimulating factor that encourages companies to outperform each other and stand out by being innovative, thus demonstrating greater diversity of supply and attractive prices for consumers.

This theory was originally developed by Kenneth Arrow (1962, 620) : “*The preinvention monopoly power acts as a strong disincentive to further innovation*”. According to the American economist, as soon as the intensity of competition on the market slows down,

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<sup>2</sup> European Commission. “DMA impact assessment”, [https://ec.europa.eu/info/sites/default/files/impact-assessment-dma\\_en.pdf](https://ec.europa.eu/info/sites/default/files/impact-assessment-dma_en.pdf)

companies freeze their strategy and have less incentive to reinvent themselves, because of the monopolist's interest in the status quo. The Nobel laureate complements this statement by saying that a monopolist often has less incentive to innovate, because it has less to earn, compared to a challenger who can expect to take away a large part of the incumbent's business (Baker, 2007). This phenomenon is theorized as the "Arrow effect". Sometimes it may be that some companies obtain larger market shares, by its own merits. However, these may be inclined to foreclose the market and prevent the establishment of new entrants. The Competition Authority is therefore essential in the remediation of the competition process.

### ***2.2.2. Schumpeterian rivalry - "The prospect of market power and large scale spurs innovation"***

But one might fault the Commission for neglecting the very different way in which the high-tech network industry functions. Indeed, in the digital sector, where technological changes happen to evolve at a very fast pace, the concept of competition is to be apprehended in another way. In fact, *dynamic* competition *for* the market is more relevant than *static* competition *in* the market (OECD, 2002). The applicable theory behind this view is the Schumpeterian rivalry theory, which approaches the relationship between the two concepts [competition and innovation] very differently. As Joseph A. Schumpeter (1942) argued in his book "*Capitalism, Socialism and Democracy*", some markets are inherently best served by a small number of concentrated firms with significant market power, and competition manifests itself in the fierce race of any system/platform/service to become the standard in the market. Nevertheless, temporary market power is a necessary condition for the occurrence of dynamic competition in Schumpeterian theory. Key features of industries where this kind of competition is keen to occur are i) existence of network effects and scale economies, ii) high sunk costs and low marginal costs and iii) winner-takes-all contest. Indeed, in industries characterized by strong network effect, the coexistence of ill-assorted products/services tends to be unstable and the winner will naturally dominate the market and take most (OECD, 2002).

Schumpeter's statement is that large companies in concentrated markets have an innovation advantage. Indeed, following Schumpeter's theory, the positive effect of market power on innovation can be summarized as such i) expectation of some sort of ex-post market power ii) possession of ex-ante market power that provides companies with internal financial resources (Cohen and Levin, 1989).

In this model, a dynamic system of competition occurs through a succession of temporary monopolies, replacing each other by means of innovation. The economist [J.Schumpeter] referred to the term "*creative destruction*" to describe this breaking down of past practices to make room for new technologies, products, services, or new means of production. The theory constantly producing winners and losers perceives static competition as detrimental to innovation and technological progresses (Liberto, 2021). With the Schumpeterian theory in mind, leading firms will have a constant urge to innovate in order to keep their cutting edge and not being replaced by more innovative firms.

Overall, Schumpeter objected to the prevailing view according to which perfect competition was the way to maximize economic well-being. The economist argued that some degree of monopoly is preferable to a competition system where all firms have access to the same technology to offer the same product/service. Indeed, the prospect of attaining a monopoly rent induces firms to innovate. That way, the Schumpeterian hypothesis claims that there exists a close relationship between innovation and the structure of a market ; only companies that have market power are able to support the costs related to innovation. And then the process of creative destruction occurs, especially in the digital sector, where technological turbulence is sufficient for dominant platforms to be challenged.

A quick look at the digital market in recent years shows that many disruptions have taken place, with generally positive repercussions on competition. For example, Google caught the eye of Windows 'users, with the advent of Internet-centric computing. Facebook, a social media platform of the time, grew into an alternative market, reducing Amazon's dominance. Also worth mentioning is the rise of smartphones, which made computers take a back seat.

Policymakers should approach this issue as a trade-off between the long-term benefits of a higher rate of innovative activity in a more concentrated market and the short-term efficiency offered by competition.

#### *2.2.2.1. Concluding remarks*

Platforms, as we noted in the previous section, provide inputs to other firms, which themselves compete and innovate. What hinders innovation in downstream segments and markets is the abuse of market power by these platforms. Accordingly, the set of rules designed to promote

competition is intended to support the business customers of these platforms, to enable them to compete on a sound basis.

In light of the connection between the notions of innovation and competition, and building on Schumpeter's philosophy, the concept of **dynamic competition** is interesting in the sense that it treats the two notions as co-determinants of changes in the structure of the market.

While firms in static competition compete for existing rents and provide close substitutes, dynamic competition doctrine describes situations in which firms compete for potential future rents. In the latter situation, rivals compete through product differentiation, integration, diversification, ... (Petit & Teece, 2021).

As explored in the previous section, in dynamic competition we distinguish between two forms of competition, namely competition "for" the market and competition "in" the market. Both forms of rivalry can coexist in the same market and at the same time, it is solely a matter of understanding how to build on these theories to better adjust a regulation and get the best of both, at different levels.

### **3. Analysis [How to regulate ?]**

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Industrial age concepts such as monopoly power, natural monopoly, anti-competitive behavior and predatory mergers are well suited to provide an attempt to understand and regulate Big Tech. However, the technical input involved in the digital platform economy (Big Data, artificial intelligence,...) and the process of innovation (technologies, business models,...) are impacting market structure and economic performance in a very novel way (Petit & Teece, 2021). Therefore, I believe that in order to effectively attempt to embrace and regulate this new platform economy, we need to shift the paradigm from a static perspective to a more appropriate dynamic perspective.

#### **3.1. Network industries**

The purpose of this subsection is to use the comparison with the telecommunications industry to assess the extent to which we can learn from the past. By exploring the similarities and differences, I will try to understand if a link can be established and which features are worth considering. It seems, as we will see, that the telecommunications sector was long considered a natural monopoly, until an evolution of the technological system redefined the structure of the market, making them no longer natural monopolies. Observing how regulators have treated these infrastructures accordingly can be useful and instructive.

The new playing field emerging from the internet seems very open to competition at first sight. Poorly regulated, agile, and propitious to the rapid success of start-ups, one might think that the Internet would have marked the end of natural monopolies. In fact, new ambiguous forms of monopolistic systems are appearing, as we will analyze.

In the digital sector, dominant tech companies have been subject to antitrust proceedings, and debates arise as to how to control them. The idea to use the network industries for guidance on how to shape the regulatory scheme for digital platforms is not new, and that because they seem to have undergone a rather analogous trajectory. Until the 1990s, these markets were highly concentrated; it was assumed that economies of scale and network effects would make the joint participation of several suppliers inefficient, and might detrimentally fragment the market (Werner, Kretschmer, 2021). Since then, procompetitive ex-ante measures have succeeded and complemented one another, such as the unbundling of vertical chains into services that remain natural monopolies and services where competition is possible. The energy industry, for

example, was divided accordingly. The 1996 liberalization was accompanied by unbundling, which made it possible to distinguish between liberalized operations such as generation and retail, and transmission and distribution services, which were provided by natural monopolies. That was done in order to “*to deliver real choice for all consumers [...], new business opportunities and more cross-border trade, so as to achieve efficiency gains, competitive prices, and higher standards of service*” (EU Directive 2009/72/EC (1)).

EU Commissioner Vestager expressed the view that the concept of essential facilities could perhaps be re-examined in the digital sphere, particularly with attention to granting access to competitors. One wonders, therefore, to what extent a comparison is feasible (Petit, 2021). The objective is not to present a set of proposals, but rather to highlight parallels and lessons learned from other network facilities-based regulatory mechanism.

### ***3.1.1. Tendency to form natural monopolies***

Monopolies have regularly been the target of authorities seeking to regulate them and restrict their power. By theorizing the extreme situation of monopoly, as opposed to that of perfect competition, and then by studying its different aspects, economists have developed tools to better comprehend and address monopoly power. While not all monopoly positions are necessarily harmful, as the dynamic approach to monopolies illustrates, their permanent nature might be a source of concern. Indeed, it creates profits not justified by the general interest and discriminates consumers and other firms in the market (Lévêque, 2019).

In John Stuart Mill’s work, as opposed to artificial monopolies that emerge through legal mechanisms such as patents and copyrights, natural monopolies are defined as the products of circumstance, not law. In his analysis, urban gas and water supply are cited as examples of natural monopolies. Indeed, these are found in facilities because they are characterized by very large fixed costs and economies of scale and scope. Duplication of such infrastructures would be inefficient because it would imply a higher cost for the society (Lévêque, 2019).

In addition to the definition of natural monopolies relating to costs, natural monopolies can also result from the existence of network effects. According to the OECD, natural monopolies derive their position both from the nature of the asset, and from the nature of the demand. Indeed, elements of natural monopoly are likely to arise in network infrastructures, as they involve the

provision of multiple services over a common network. Antitrust regulators are investigating whether "network effects" can be regarded as a feature of natural monopoly.

Platforms monopolies are based on network economies, a concept that only surfaced in the economic literature as from the 1980s. In fact, these platforms are not only found on the internet; an airport also plays the role of an intermediary between passenger and airlines, and just like online platforms, an airport benefits from the network effect as the more passengers it attracts, the more companies will have an incentive to provide their services in this airport, and vice-versa. This second cause lies in the non-utility provided by the use of multiple platforms, compared to the benefits that the network effect yields. And while the natural monopoly is typically found at the infrastructure level of the industry, competition is rather viable in the upstream and downstream sectors.

### ***3.1.2. Regulation of network industries [Liberalization process]***

Most network industries rely on infrastructures displaying features of natural monopolies. In general terms, governments regulate those by subjecting them to regulation on pricing and access to network, notably by limiting prices, controlling mergers, breaking up companies, or by privatizing monopolies. Since the eighties, the EU legislation has reshaped pretty much all network industries, aiming at opening these markets to competition. While the pace of market opening and requirements vary across sectors, all are subject to the same type of regulation, i.e. ex-ante regulation (European Commission, 2013).

#### *Case: Telecommunication sector*

Historically, the telecommunications sector has been highly regulated, with government intervention in all aspects of business activity, from ownership to entry and pricing. In the majority of OECD countries, until the 1980s, the provision of telecommunications services was carried out by state-controlled enterprises holding a legal monopoly. Indeed, regulation was advocated on the basis of two factors: natural monopoly and externalities. The former was based on the fixed costs of establishing the network and infrastructure, and the latter was related to the network externalities and the benefits it entailed for society (health, information, defense). The specific regulation was justified by these demand-side economies of scale (Boylaud & Nicoletti, 2002).

Due to technological development in part, which has led to a substantial drop in costs and the ability to bypass the fixed network to reach consumers, many of the attributes of the natural monopoly have been eliminated and the industry had to adapt with new approaches of regulation. Subsequently, legal barriers to entry in this sector were removed in the eighties in the United States notably, as well as the United Kingdom. In European countries, liberalization was established more recently (Boylaud & Nicoletti, 2002).

With respect to the **United States** more specifically, from 1876 until 1893, AT&T held its original telephone patent [Alexander Graham Bell]. At the time of the patent expiration, 6000 independent telephone companies entered the market, but customers who were subscribed to competing network were unable not connect. At this moment, government regulator favored AT&A as the sole provider of telephony services, making it a natural monopoly. By the 1980s, the group AT&T controlled ninety per cent of the US phone market. The company's domination on local telephone systems and equipment left no space for its rivals. Hence, 1984 was a year of drastic change in telecommunications in the US, when AT&T was split into a long distance company and seven independent regional telecom providers – the so-called 'Baby Bells –, which held regional monopolies (Robinson, 2021). In 1996, a second wave of regulatory intervention was introduced with the Telecommunications Act, whereby Baby Bells were compelled to interconnect their network with newcomer phone companies. In addition, it also required number portability, in order for subscribers to be able to keep their phone number, while changing carriers (Reid, 2021).

Across **Europe**, prior 1980, the efforts were directed towards controlling and encouraging efficiency in national monopoly telecoms companies. In response to the technological advances, a framework was designed to the opening of national EU markets for telecommunications equipment and services – which resulted in the liberalization of the market in 1998 with the “First Telecoms Package”. Later, in 2002, the “Second Telecoms Package” was introduced, with as primary objectives the promotion of a competitive environment, the protection of consumer interests, and consistency across the European markets (Tsatsou, 2010). The reasons behind the liberalization of the telecoms industry in Europe lie in three respects. First of all, the evolution of technology brought about the need to change the existing management of the telecommunications sector. A monopolistic structure was more of a barrier than a gateway to unlock new technology possibilities and competition. Secondly, globalization phenomenon contributed highly to the need for the telecoms sector to be adjusted. Thirdly, the sector was subject to a global trend of liberalization, in the US with the breaking-up of AT&T notably (Liikanen, 2001). The role of the Commission in the path of telecom development on the continent consisted in initiating the liberalization and harmonizing the process by establishing a set of directives targeted at NRAs. Indeed, common rules were necessary to form an integrated EU-wide telecoms market. Therefore, the Open Network Provision (ONP) framework was set up so that new entrants could freely access the networks of former monopolies and create a competitive environment. It involved asymmetric regulation for incumbents, to which new entrants were not bound.

### ***3.1.3. Comparison***

Reactivating the concept of network industries – as well as their tendency to behave as natural monopolies – is an appealing and seemingly clever approach to addressing the regulation of digital gatekeepers. However, the relevant economic analysis in question must be considered.

### 3.1.3.1. Similarities

Let's take a look at a series of similar features that these industries share, with the telecommunications sector as a general point of comparison.

- ⇒ Economies of scale : A platform is formed of algorithms which require a lot of investment in R&D. But, once all fixed costs are covered, marginal costs tend to zero.  
// In the telecom sector, once a telephone network is installed, which incurs high costs, the remaining expenses of connecting additional users are rather low.
  
- ⇒ Economies of scope: Once a platform is implemented in a market and is able to have gathered a good amount of information, it is in their interest to make use of this information to expand to other markets. A concrete example of economies of scope is Uber, the taxi company. As the company has accumulated route data, they smartly decided to use their information on mobility to expand to the food delivery market.  
// In the telecommunications sector, operators also seek to deliver a variety of fixed and mobile services given the lower costs associated with bundling these.
  
- ⇒ Learning curve : Inventory management is key in managing a firm, and having information on sales over time improves predictability. An example would be Amazon which notices that every year people tend to order the same kind of products at a certain period. Thanks to that information, they will be able to better estimate the right amount of that product to have in storage as time goes by.  
// For the telecom sector, and more broadly the information and technology industry, the resource collection that is performed from the user network provides knowledge that is beneficial to the operator in terms of information processing, predictability, or consumer needs. In addition, as an infrastructure reaches maturity and data is automated, work can be put into cutting costs and delivering higher quality.
  
- ⇒ Two-sided platforms : Telecommunication services, just like online platforms, provide the facility of bringing together sellers and buyers.
  
- ⇒ Dual Role : Just as SNCF benefited from the right to own the infrastructure and operate its own trains on the railroads until vertical separation was implemented, gatekeepers

are currently allowed to perform business on their own platforms. However, in the digital field, competition in the exploitation is already a reality, and has been since the beginning, whereas in the rail industry, a regulation was needed to allow competitors to perform on the rail lines and thus break up the monopoly.

// With regards to the U.S. telecommunications industry, the breakup of AT&T resulted in consumers having access to greater choice and a lower price point for long-distance services. This, because before the split, the company did not allow its consumers to connect phones made by other companies to use their services. If we take the example of AT&T and its merger with TW, we observe that such vertical integration, allowing a company to be in charge of both the conduit and the content, gives incentives to discriminate against competing providers.

⇒ Network effect : The last feature can lead to situations of “*Race to the standard*” or “*Lock-in effect*”. The consumer’s stake is to be on the standard that will win. In the race to the standard, several companies will offer the same service, but one will take the lead and entail a lock-in effect of consumers that make it complicated for them to take a step backward. This concept is easily explained by the feedback loops effect – defined in section 2.1.1.3 – (Combe, 2020). Strong direct network effects may generate a lock-in effect of users. If we take the example of Facebook, a user will have to convince all his contacts to switch platforms if he wants to switch too. Strong indirect network effects can also lead to a lock-in effect of advertisers if the incumbent platform serves as an mandatory gateway to reach their target audience (Carugati, 2020).

// In telecommunications markets, customers derive their utility not only from the product/service that is offered, but more importantly from the network that surrounds them. This is because the existing user base provides clients with increased compatibility, transfer capabilities and reduced uncertainty. Moreover, prior to the introduction of number portability by EU and US regulators, user lock-in effect affected negatively competition in the telephone segment, as users were forced to change their phone number when they wanted to switch telecom providers.

As Dipayan Ghosh (2019) explains : «*The major companies that make up the network constantly exhibit network effects: the networked services operated by Facebook, Amazon, and Google become more valuable when more users use them. This makes it extremely difficult for new entrants to offer competitive levels of utility to consumers*

*from the start. Like telecommunications before it, this industry now maintains impossibly high barriers to entry»*

⇒ Trend in Mergers and acquisitions: As further discussed below, the tendency to M&A seems to be very common in both sectors. In the telecoms industry, mergers have taken place both between direct competitors and vertical complements. In the digital sector, we have also witnessed numerous mergers and acquisitions. Mergers between large vertically related players and between potential competitors have also become the object of increasing attention from antitrust authorities. (OECD, 2019).

All of those factors do not thoroughly characterize the platform economy because these are features that can be found in many industries. Nonetheless, in the digital industry, the four features are simultaneously combined. And therefore digital markets have inherent ingredients that are naturally conducive to market concentration and consequently to the formation of monopolies (Combe, 2020). But while these industries share many attributes, digital platforms combine them in a different way. Most of all, certain characteristics which are inherently different in the two cases, make it ill-suited to follow a facility-like regulation.

### 3.1.3.2. Dissimilarities

With regards to value creation on digital platforms, operations by third parties on the interconnected ecosystems constitute its main driving force. Conversely, facility network industries are characterized by substantial supply-side economies of scale through the transmission infrastructure, such as electricity, water and telephone calls.

As far as the innovation cycle is concerned, digital platforms are known to operate on a constant-changing and very dynamic ecosystem, where innovation take place at many levels. On the other hand, innovation cycles in other network industries are lengthy and disruptions are not frequent. In fact, investment and innovation efforts are predominantly directed at preserving and improving physical infrastructures.

Perhaps the most distinctive feature is the sector in question. Digital platforms, unlike utility infrastructures, are not enclosed within any single market sector (Werner & Kretschmer, 2021).

Another difference to be aware of is that of geographical boundaries. While traditional network industries are by nature locally based and are therefore regulated at a national level, very large online platforms operate on a global stage. As a result, they will be more appropriately regulated by legislators and regulators at the European and US levels.

The need to redefine the underlying analytical tools lies in the intrinsic divergences that characterize digital markets, as opposed to tangible markets. Static economic analysis may have been relevant when assessing competition issues in mature industrial-age industries, such as the automobile industry. In the digital economy, where intangible assets such as data collection or intellectual property matter more than tangible assets, a dynamic approach might be needed.

### ***3.1.4. How far this comparison can be useful?***

#### ***3.1.4.1. Market failures***

Regulations should never be taken by default. Regulation must be called for when market failures, being the strongest justification for regulatory intervention, prevent the market from maximizing social welfare, and if ex-post competition policy tools are not expected to be effective. In the digital economy, two major market failures occur: *Market power* and *information asymmetry* (Carugati, 2020).

In what regards *market power*, we notice that Big Tech firms dominate the digital economy which is highly concentrated, dominated by one or two firms. Users are drawn to the network with the greatest mass of other users, making it the new standard, and one difficult to compete with. Indeed, the stronger these barriers to entry, the more likely monopoly emerges.

And if, in the telecommunications sector the assessment is “conventional” in the sense that markets are characterized by the provision of a set of services within one-sided supply chain business models, in the context of digital platforms, market power may be more complex to measure. The difficulty arises in understanding on which side of the platform market power arises, and where the harm occurs (Ovington, Houpis & Kenny).

*Asymmetry of information* is a second threat to consumers and other businesses in the digital economy. While data aggregation generates positive externalities and is a source of value gains for users, it also leads to market failures (European Union, 2021). It creates high barriers to entry for new participants who are not able to collect an appropriate amount and variety of data

to eventually gain market power over established platforms. Platforms argue that users can freely consent. But in reality, things are different. This highlights a real and serious problem that deserves attention. In cases where there is no competition and platform users have no choice but to accept the terms of access to the platforms, the dominant platform gains a significant advantage at the expense of users and competitors (Carugati, 2020).

When addressing competition issues in a market, one must ask whether market failures are caused by the presence of illegitimate monopolies or whether they result from the structure of the market. It seems that, in the case considered, we would be dealing with structural problems more than monopoly problems. Indeed, the market structure underpinned by traditional and data-driven network effects, access to data, and economies of scale and scope are at the basis of the entry barriers and thus prevent smaller businesses to effectively penetrate the market. Subsequently, an ex-post competition enforcement is not sufficient and adapted to the matter.

#### *3.1.4.2. Ex-ante regulation*

In markets such as the telecommunications sector, which are most susceptible to market failures ex ante intervention has proven to be the most appropriate solution. This preventive regime in the telecommunication industry is applied through asymmetric rules and tailored remedies.

In addition, the European Commission designed a framework to identify relevant product and service markets within the electronic communications sector susceptible to ex ante regulation. According to the text, a market is susceptible to ex-ante regulation if, and only if, three criteria apply. First, the market must have high, non-transitory barriers to entry, which can be either structural, legal or regulatory in nature. The second criterion relates to the market structure, which does not support effective competition within the relevant time horizon. Third, ex post competition law alone will prove ineffective in addressing the relevant market failures (European Commission, 2007). With respect to digital markets, this same framework can provide a useful tool for assessing whether online platforms should rely, as they have, on ex post competition law, or whether they exhibit the combination of the three criteria, implying that ex ante intervention would be more appropriate.

There is a consensus on the need for an ex ante regime for online platforms. **Ex post** competition enforcement legislation results in extensive intervention that does not allow for rapid changes in the conduct of digital businesses, which operate in an extremely changing landscape. In the

same vein, the traditional competition tool does not take into account the dynamics of the digital markets to tip, and therefore fails to effectively achieve satisfactory results. Indeed, several antitrust proceedings against the GAFAMs were underway for many years before reaching an agreement, which hampered competition in the meantime. Also, the rules only take effect after a breach has been committed and harm has been caused – regulators act reactively rather than proactively. I would therefore argue that the successful experience in the telecommunications sector provides a solid and valuable foundation for legislators to build upon. Hence, in terms of structural characteristics are concerned, they share many common features.

#### *3.1.4.3. Concluding remarks*

Drawing on the regulation of AT&T's and EU national firms' natural monopoly in their early days, one can perceive their desirability from the point of view of network externality, taking into consideration the maximization of economies of scale and scope, or network standardization. However, this structure has not proven to be the most effective, especially in connection with the creation of barriers to entry, the restriction of communication facilities, the expensive interconnection costs. As a result, the protection of these companies by the government, particularly as a national network, was no longer worthwhile, as it did more to impede competition and opportunities for innovation than to provide benefits. This shift away from the notion of natural monopoly has taken place in a large proportion of network industries in Europe, the water sector probably being the network industry in which natural monopoly elements continue to be most prevalent.

Using its definition on cost concepts, natural monopolies are difficult to compare with digital markets, but the similar market characteristics identified between the latter and network industries previously considered as natural monopolies allow us to establish a clear link and identify some aspects of regulation that can be appropriated. Perhaps the main insight that we can draw on, has to do with the **ex-ante method** of regulating, the ex-post competition legislation being seemingly unable to tackle these. In addition to this, as stated above, the use of **asymmetric rules** related to access obligations might appear as an appropriate manner to tackle problematic market power of gatekeepers, as legislators in telecoms have implemented. Finally, the concept of **interoperability** and **portability** introduced in the telecommunications legislation is valuable in the search for rules that are relevant and appropriate to the digital market. Indeed, just as there can be no telecommunications without interconnection, i.e. without

the possibility of mutual access of the various operators to each other's networks, and of the various service providers to the networks of all the operators, the Internet world cannot function without it either (Curien, 2001). In this regards, lawmakers might be eyeing on an environment where Facebook users could exchange and communicate with users of rival platforms like LinkedIn or TikTok, just as the phone or radio sectors work these days.

Facilities regulation aims at opening up to competition markets that are prone to natural monopolies. This is achieved through a set of mandatory duties and obligations translating generally into shared access to infrastructure. The DMA seems to be taking that path in a certain way, imposing ex-ante obligations on data sharing, portability and interoperability notably, the underlying thought resting on the fact that data constitutes a facility. However, the digital landscape is accompanied by a set of characteristics not attributable to any other network industries previously regulated. Legislators must be careful to take into account when drafting the relevant framework. Moreover, the digital economy is clearly set apart from other industries in that it is highly data-driven, not to mention the wide variety of business models that must be considered, which adds to its complexity. Perhaps most distinctive characteristic of digital platforms, which is the boundaries of their activity, makes it a priority to regulates platforms on a European scale, in contrast to the telecommunications framework in which NRAs were clearly charged with much greater responsibilities, as the business of the sector was conducted at national level. This time, the challenge is one that must be met by Europe as a unit, with a dual focus on (i) creating a level playing field for startups SMEs at the EU level to grow and (ii) creating an environment conducive to competition with U.S. Big Tech.

Finally, while the driver of improvement in a static competitive landscape such as the physical network industries lies in the notion of efficiency, this is not the case in Big Tech where competition is dynamic and the driver of improvement is rather innovation.

### **3.2.Digital Markets Act**

Digital Markets play an ever more central and advantageous role in consumers' lives. However, with the intensification of power of platforms and the risk of its misuse, concerns regarding potential detrimental consequences for consumers have arisen. In our democracies, it is not the duty of Big Tech to set the rules of the game, but that of the legislators. Existing EU tools intended to deal with competition and consumer protection notably are not suitable to digital markets. Thus the Digital Services Act Package have been proposed as an instrument to ensure a future online world that best supports the interests of European consumers. Composed of the Digital Service Act (DSA) and the Digital Markets Act (DMA), the proposal was issued by the European Commission, twenty years after the introduction of the e-commerce directive, which has become outdated to set the tone for large technology companies that have meanwhile become hegemonic and systemic. It is also intended to complement (i) the Article 102 of the Treaty on the Functioning of the European Union (TFEU) forbidding abuses of a dominant position, as well as (ii) the EC Merger Regulation. The DSA set the rules for provision of digital services in Europe, but does not focus on market power and gatekeepers. Instead, it is the DMA that aims to develop a regulatory framework for providers of online goods and services who act as gatekeepers and hold substantial economic power (Samman, 2021).

Yet more importantly, this thesis addresses the competition issues of the online platform economy. Therefore, we will now analyze the European Commission's proposal to regulate this matter, namely the Digital Markets Act, which constitutes the first of the two building blocks on which Europe intends to build its digital single market, as it did for steel and coal.

The DMA is being designed with the aim of ensuring fair, contestable<sup>3</sup>, and open markets for digital services. The proposed text sets three specific objectives, namely (i) ensure the contestability of digital markets, levelling the playing field among existing gatekeepers and other firms proposing substitutes and complementary digital products/services, (ii) guarantee fairness, especially to business users of platforms, and (iii) harmonization in order to strengthen the internal market. The Commission's new antitrust arm intends to address market failures resulting from the extensive power held by few providers of online services. According to Fiona

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<sup>3</sup> Definition : "The contestable market theory is an economic concept stating that companies with few rivals behave in a competitive manner when the market they operate in has weak barriers to entry" (Liberto, 2021).

Scott Morton (2021), Professor of Economics at the University of Yale, the DMA appears as a reaction to what has been happening over the last ten years of antitrust enforcement both in the US and the EU where we witnessed that the regulation in place was not enough. She specifies that in the EU there have been 10 years of cases against Google and that no change has occurred in market structures. Authorities see no justifiable reason for companies to amass all the surplus and market power. The argument is that consumers would be better off if these tech giants were subject to potential competition, allowing something better to develop and maintain itself. Indeed, the rationale behind the DMA is that “[a] few large platforms increasingly act as gateways or gatekeepers between business users and end users and enjoy an entrenched and durable position, often as a result of the creation of conglomerate ecosystems around their core platform services, which reinforces existing entry barriers”<sup>4</sup>. The Commission believes that the DMA has the potential to open the markets to new entrants, SMEs, start-ups, and by this promoting a greater choice for consumers. It also would drive innovation beyond what is possible under the competition law currently in order.

Overall, there are two dimensions to consider. The first is the need to establish potential competition with the platforms to combat structural problems and promote contestability of the market. The second tackles unfair practices towards business users and challengers, such as self-preferencing, unfair tying and bundling, and no or limited data sharing (Broadbent, 2020). In practical terms, the former is just a means to achieve the latter, and the Commission is trying to create a level playing field and enhance the innovation potential of the online platform landscape and their business users in the EU's digital single market. In addition to this, the implementation of the DMA rests on the concern that traditional European companies and industries have been having a hard time competing with large US- and Chinese-based online platforms.

Following 16 months of triilogue negotiations between the European Commission, the European Parliament and the EU Member States (under the leadership of the French Presidency), the agreement was finalized on March 24, 2022. The text should enter into force next October after which a transition period should follow. As Tommaso Valletti (2021), a former chief competition economist at the EC, states, the European Commission will have to go from theory to practice and observe if it works, taking into account that criteria will be

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<sup>4</sup> DMA (n 2) Explanatory Memorandum, p.1

subject to a reassessment every two years, in order to make sure the legislation keeps pace with the digital economy evolution.

In what concerns the role of Member States in the DMA, discussions are emerging about the greater role that countries want and need to play. Indeed, while the implementation of the DMA is and will remain in the hands of the European Commission, the question of whether member states could participate in the enforcement effort is increasingly being considered. The eighty full time equivalent workers that the Commission intends to recruit may not be sufficient to ensure the smooth operation of the DMA (Geradin, 2021). In addition, as advanced by de Streel et al. (2022), Member States authorities have valuable advantage such as being closer to markets and local business users, and having expertise when it comes to imposing access and interoperability measures in non-digital markets. That said, it can be argued that, although the EC remains the principal regulator, smooth cooperation and joint supervision between the Commission and national authorities is desirable.

The Digital Markets Act is directly toward big tech companies designated as gatekeepers. A gatekeeper status can be ascertained based on quantitative measures, such as financial and user base threshold. Alternatively, the European Commission is entitled to conduct a qualitative assessment to identify these. A key indicator to designate gatekeepers is that of observing if the undertaking has significant impact on the market and if the company enjoys entrenched and durable position of gateway for the business users to reach their end consumers (Bernaerts, 2021). More concretely, a gatekeeper will be defined as a tech companies with a market capitalization of at least €75 billion, or annual revenues within the EU of at least €7.5 billion in the past three years. In addition, these companies must count at least 45 million monthly users, or 10,000 business users in the EU (European Parliament, 2022). The framework has established a list of obligations that designated gatekeepers are required to comply with. Before digging deeper into their pro-competitive and anti-innovative aspects, it is worth providing some examples of rules, the complete list of which is available in Appendix 1.

*Examples of do's:*

- √ Notify the EC if a platform meets the gatekeeper threshold or plans a M&A transaction,
- √ Ensuring freedom of users to install or uninstall software app, to apply different prices and conditions (e.g. Apple's iOS and Google's Android would be obliged to let consumers to uninstall any preloaded apps).
- √ Provide data portability rights to users,

- √ Provide access to data to business users,
- √ Comply with transparency provisions in online advertisements, search engine, and profiling.
- √ Provide access and interoperability to software features.

*Examples of don'ts:*

- × Not require end or business users to subscribe or register to any service as a condition to access,
- × Not use data that is not publicly made available,
- × Not favor its own selection and discriminate in rankings (e.g. Google would not be able to preference its own shopping service in search results),
- × Not technically restrict end users from switching platforms, and others,...

### ***3.2.1. Pro-competitive features of the DMA***

#### ***3.2.1.1. Ex-ante regulation***

Unlike existing competition law, under which, pursuant to Articles 101 and 102 TFEU, competition authorities can only intervene ex-post, one of the main features of the DMA is that it will follow ex ante regulation, prohibiting and requiring certain practices, listed on a black list and a white list (See Appendix 1). Some of the prohibited practices correspond to complaints the European Commission dealt with when opening antitrust investigations against giant tech companies. In the past, competition enforcement has relied on an evidence-based approach with special attention to regulating anti-competitive conduct and promoting efficiency. The primary goal of this change is to ease the monitoring of competition. Basically, the ex-ante practice simply derives the consequences of the notion of gatekeeper platform, by applying the means of regulation used for quasi-monopolistic essential infrastructures such as the rail network or the telecommunication sector (Cédric O, 2021).

In a debate held by PubAffairs Bruxelles (2021), Martijn Snoep states that, although it may entail a risk of over- and under-enforcement, a shift in the burden of proof - regarding the designation of gatekeepers, as well as the identification of certain practices regarded as unfair - will undoubtedly improve the manageability of the intervention sought compared to ex-post competition law. He adds that ex-ante regulation emerges as providing increased chance for consensus/compromises with companies that are willing to cooperate.

#### ***3.2.1.2. Data interoperability***

The concept of data interoperability consists in the ability for systems that create, exchange, and consume data to enable the sharing of information (Crémer, de Montjoye & Schweitzer, 2019). One possible method to fostering cross-platform competition, despite the presence of network effects and the trend towards concentration that they create, would be to implement cross-platform “interconnection”. In an emerging market, in the absence of any interconnection measures, strong “for” market competition may occur between rival platforms, each of which will attempt to expand its network quickly and extensively. It is likely that the market will stabilize and tippe eventually in the absence of interoperability. Thus, the introduction of such initiatives, if possible, can be used to create more competition “in” the market. Moreover, in cases where platforms are of similar sizes, interconnection may bring considerable benefits to all participating companies.

The challenge is mostly important for emerging entrants that are not integrated in the business environment of Big Tech, because they are excluded from the data flows. Therefore, guaranteeing universal and undistorted access to data would reduce the barriers to entry (Marty, 2021). This is actually what has for a long time being imposed in telecoms.

### *3.2.1.3. Data portability*

In the attempt to make digital markets more competitive by allowing users to select platforms freely and enable multi-homing, the Commission attaches great importance to data portability. It refers to the possibility for users to transfer the data that was collected about them by a platform. As a result, switching platforms, and multi-homing<sup>5</sup> are simplified (Crémer, de Montjoye & Schweitzer, 2019).

The Commission is concerned with the widespread gathering and usage of data by gatekeepers. It reported that collection of data over a long period of time delivers undeniably a robust competitive advantage to the holder. Consequently, it can intensify barriers to entry for smaller firms. With that in mind, it would be recommended to enable users to move their data between platforms, to support open standards within a platform and allow challengers to have access to some data (Kennedy, 2020). According to the Commission, access to data is at the forefront of

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<sup>5</sup> Multi-homing happens when users or service providers form ties with multiple platforms at the same time (Harvard Business Review, 2019)

unblocking competition. In addition, as Scott Morton (2021) states, both data portability and data interoperability allow economies of scale to be achieved at the market level and thus attract new entrants. It also enables startups to grow at a faster pace and with fewer resources. (Broadbent, 2020). In fact, data portability mechanisms are already implemented in a series of EU legislative acts, such as the General Data Protection Regulation (GDPR), the Digital Content Directive, and the Free Data Flow Regulation (European Parliament, 2020).

### ***3.2.2. Anti-innovative features of the DMA***

#### ***3.2.2.1. Ex-ante regulation***

A criticism that can be made by Jebelli (2021) concerns the pre-determined notion of gatekeepers (See Appendix 1 (Art. 3)), which may create a threshold effect where challengers will attempt to avoid these thresholds and thus escape the obligations. It might lead to a reluctance of startups to scale up and innovate. Indeed, while it is in the interest of online platforms to reach as many businesses and users as possible by cultivating the network effect, the burden of falling within the definition could deter investment. However, the threshold at which a company can be designated as a gatekeeper – *revenue in the European Economic Area equal to or greater than €7.5 billion in each of the last three financial years, or average market capitalization of at least €75 billion in the last financial year* (European Commission, 2022) – is very high compared to the average size of companies in digital markets. As such, only around fifteen companies would meet the threshold (de Streel, et al., 2022).

By contrast, as Andrews et al. (2019) explain, technology adoption, and thus innovation, is affected by policy. Companies, even if they can afford to adopt digital technologies, will only implement them if it is profitable. They show that the gap between laggards and pioneers is smaller in industries facing pro-competitive reforms, such as telecommunications. Their reasoning is that in markets where regulations are not reformed in an adjusted way and where competition is then weakened, competing firms have less incentive to adopt the state-of-the-art technologies.

#### ***3.2.2.2. Potential free-riding of startups due to data interoperability***

Kahwaty and Teece (2021), who are chairman and director manager of the Berkley Research Group, respectively, argue that imposing data interoperability encourages free riding on the investments of others, to some extent. The main point of concern comes from Article 5(c) of

the DMA, which allows business users to enter into contracts outside of the platform, as SMEs would be able to reach out to the user base of existing businesses and thus benefit from the matchmaking service provided by the gatekeeper, for free. Both authors are concerned that such a provision will undoubtedly discourage R&D spending by existing platforms.

However, in light of this concern, the preamble to the text has been edited and henceforth business users can only enter into transactions with end users once the gatekeeper has been rewarded to provide the connectivity service. This provision is intended to prevent business users from "free-riding" on marketplaces such as Amazon and not to tamper with the innovative spirit of these large firms (Bertuzzi, 2022).

#### 3.2.2.3. *Dynamism of business models disregarded*

Cennamo and Sokol (2021) argue that the DMA goes against the fundamentals of platforms' business models and thus could potentially hinder innovations related to their business model. According to them, online platform represent an new way to organizing economic activity, bringing together independent multiple actors. And Kahwaty (2021) agrees on that with them, as she calls for due attention from the legislative parties; dynamic models of competition and innovation are completely disregarded in favor of more rigorous, static and structured economic models designed to address other matters.

I tend to believe, on the contrary, that the DMA is aiming for a more dynamic way of regulating firms active in the digital economy, as opposed to the way traditional antitrust cases are handled. The DMA rightly frames the initiative as necessary to address competition issues, as member states' regulatory initiatives are no longer adequate for the digital world: "*It addresses unfair practices by gatekeepers that either fall outside the scope of existing EU competition rules or cannot be addressed as effectively by those rules, as the application of antitrust rules concerns the situation in specific markets*" (European Commission, 2020). The challenge now is to take into account the specific business model of each targeted gatekeeper when applying the DMA rules. Actually, de Streel et al. (2022) suggest that the European Commission could develop, as was by the Competition and Markets Authority (CMA), a specialized technology team to help the lead regulator monitor gatekeepers in their complexity.

#### 3.2.2.4. *Competition "for" the market hindered*

The introduction of interoperability rules, which result in a level of similarity between their offerings, undeniably reduces the room for differentiation between suppliers. Subsequently, interoperability only promotes competition “in” the market. In the long run, however, it is preferable that competition for the market remains possible, in cases where innovative new entrants manage to enter the market and survive by developing superior technology capable of overtaking the incumbent (Bourreau, Krämer & Buiten, 2022).

#### *3.2.2.5. Data as a key driver*

Data serves as key driver for innovation in the digital economy. Whether it being through collecting, accessing, organizing and analyzing data, companies are able to improve their algorithms, growth opportunities and strategies. Ezrachi and E. Stucke (2020) think that by establishing ground rules such as data portability or interoperability, incumbents might also be discouraged from making new investments, as challengers (startups) and business users (SMEs) may benefit from their hard-earned information gathering. This concern could stem from Article 6(1) of the DMA, which prohibits gatekeepers, in competition with business users, from using data that has not been made public and that is generated by the activity of these SMEs. However, this argument would be valid the other way around, as it would be unfair for business users to be denied access to data created by their own efforts. It is therefore necessary to weigh the pros and cons of both and see which is the least harmful. (Appendix 1).

#### *3.2.2.6. Schumpeterian rivalry*

While the DMA suggests that market contestability and competition should be the ultimate goal, Kennedy (2020), a legal and economic advisor in the U.S. counters this view by arguing that competition can be a means rather than an end. He argues that the real goal is economic welfare and consumer satisfaction, and that in some cases, industries are inherently more concentrated and it is this concentration that maximizes economic welfare. He added that on the demand side, consumer gains increase as the number of users increases, due to the network effect. Consumers get much more value by being able to reach the largest number of people. With this view, Kennedy argues that concentration is an advantage rather than a problem, and demonstrates this by pointing out that we end up having, for this reason, one large marketplace (Amazon), one large social network (Facebook), one large professional network (LinkedIn), and one large search engine (Google). The consultant states that it is necessary for governments

to rethink the underlying goals sought by society in establishing the new regulatory system designed for digital markets.

While I agree with Kennedy that some markets are inherently more concentrated, his position as a legal and economic advisor to the public and private sector in the United States is worth mentioning, as his views on the dominance of U.S. companies may be biased. European legislators, by contrast, have a duty to protect the European economy, precisely by ensuring that innovation can be carried out by European companies and that these businesses can develop and gain customers in Europe.

In response to the idea that online platforms occupying dominant position distort competition, the OECD clarifies that disruptive innovation in this specific case is beneficial because less efficient firms will disappear and be substituted by more innovative firms, increasing consumer welfare and raising productivity. As far as innovation and market entry are concerned, one special feature of digital platforms is that, once a market has tipped<sup>6</sup>, it is very difficult to merely survive only by copying the incumbent's business model. In digital markets, entrants must explore opportunities to differentiate themselves by trying to satisfy the heterogeneity of consumer preferences. The threats of innovative challengers is significant, and this pushes any existing company to always keep up with constant innovation. With this theory in mind, boundaries of the markets are endlessly being redrawn, as incumbents and challengers continually innovate. As a matter of fact, competition is also maintained by the invention of new business models, and the most successful business model automatically reshapes the structure and architecture of the industry (Van Gorp, de Bijl, 2019). Thus, an important competitive advantage lies in the power of disruption, which the DMA intends to protect. Historical case studies have shown that none of the following companies have been able to maintain continued dominance. Whether we mention Nokia, Kodak, or even Myspace, none of these have stood up to the face of new innovative products/services, and they have all experienced a collapse in their market shares, leaving room for disruptors (Bourne, 2019).

In conclusion, what the Schumpeterian theory puts forward is this concept of self-destruction of capitalism. And in addition to the fact that the DMA seems to be putting everything in place

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<sup>6</sup> Tipping market : “A common understanding is that tipping occurs when a large enough installed base has been gained so that new users are more likely to join the product/service with the leading installed base regardless of the superiority of rivals” (Nicolas Petit, 2021)

to favor disruptive competition, I can also easily think of other plausible scenarios and reasons that could challenge the seemingly unassailable positions of Big Tech companies, such as the rise of Chinese companies or the environmental pressure making companies vulnerable to new regulations or changes in consumer beliefs and consumption habits.

### **3.2.3. Complementary comments on the DMA**

#### **3.2.3.1. Asymmetric regulation**

Carugati (2020) expresses concern that it is unfair for digital platforms that have made their way and achieved a certain position in part due to the market structure to be forced to obey specific rules. He argues that exempting non-gatekeepers from the rules will clearly leave companies subject to regulation at a competitive disadvantage. But this is obviously a moot point, as imposing such rules on all companies would penalize smaller ones that do not have the same financial resources and background to comply.

What Carugati may fail to take into account in his argument is that the problem per se that the Commission is trying to solve, as explained above, is not the dominance of Big Tech as such, but rather its abuse of dominance, which results in an uneven playing field for European challengers. Recalling the Michelin case (1983), it was formally established that a dominant firm has a “*special responsibility not to allow its conduct to impair genuine undistorted competition on the common market*” (Case 322/81, ECR 346). The European Court of Justice followed the doctrine that “*the finding that an undertaking is in a dominant position does not in itself constitute a recrimination, but merely means that [...] the undertaking concerned has a special responsibility not to allow its conduct to undermine genuine and undistorted competition in the common market.*” (ECJ Report 1983-03461, p.3511). This system of asymmetric intervention already exists in reality, it is only applied ex-post, which is not suitable for the digital market.

#### **3.2.3.2. Structure and definition of the market**

While considerable effort goes into understanding the characteristics of digital platforms in order to shape regulation around those, legislators must pay close attention to the structure and definition of markets. Indeed, as Martin Peitz explains, digital platforms operate in an environment that is very complex, whether it is in terms of relationships between cross-group

network effects, connections of different products in bundles, or vertical/horizontal connections.

First, online platforms operate in an rapidly-changing environment where companies are continuously innovating their business models. In this light, Cennamo and Sokol (2021) argue that pre-made regulation might be inadequate to effectively monitor a technology-driven economic environment with rapidly evolving structural conditions. The changing rules of the game due to creative destruction could indeed continuously redraw market boundaries (Batura; Van Gorp; Larouche, 2015).

However, the rules are centered on market contestability and thus on harmful practices by gatekeepers, and looking at the companies covered by these rules, they are very few. This means that before there is any turnover of them, the Commission will have time to verify to what extent the rules remain valid or not. In addition to this, under Article 4 (2), the DMA provides for a review clause every two years to assess whether gatekeepers continue to meet the criteria or not.

Second, the European Commission, through the DSM, is trying to apply the same rules in the digital realm as in non-digital markets. Portuese's (2021) criticism in this regard is that digital markets might not exist. He argues that there should be no distinction between digital and offline competition, and that digital could instead be seen as a distribution channel, through which digital firms compete with what we can call offline firms.

In a contrasting perspective, Martin Peitz argues that, in the digital landscape, a focus on distribution channel may lead to a market definition that is too narrow. My opinion is that the digital environment works in different ways as opposed to non-digital markets, and considering digital markets separately seems to me correct and necessary in order to correctly delimit markets, which forms of substitutes we are dealing with, which user groups, etc.

Third, with regards to the multi-sidedness feature of digital platforms, it must be apprehended the substitute constraints on both sides of the platforms, when defining the markets. Indeed, as Martin Peitz explains, for market definition purposes, one must follow the multi-market approach. Otherwise, the risk is that one might be overlooking interdependencies between these different markets that arise due to cross-group network effects.

Fourth, this data economy encompasses many different monetization models. Martin Peitz says that new forms of non-transactional platforms are emerging, where consumers have access to

highly efficient services without having to pay for them, at least not directly. However, they do bring benefits to the platform by providing their data and attention. He argues that, in the context of market definition, limiting oneself to transactional platforms alone ignores the competitive constraints that may also arise due to the presence of non-transactional platforms. In his view, this concept should not be examined through the prism of remuneration, but rather with a view to understanding the business activity that takes place in the market.

### 3.2.3.3. DMA measures on killer acquisitions

As I mentioned above, the distinction between competition "in" the market and "for" the market might need to be further addressed in the DMA proposal. To this end, a more in-depth examination of mergers and acquisitions may be called for, as they contribute significantly to both.

In the **United States**, discussions about dismantling Big Tech have taken place. In 2020, FTC called for the breakup of Facebook by selling-off Whatsapp and Instagram as independent businesses (Ingram, 2020). After accepting the purchase of Instagram by Facebook in 2012 for \$1 billion and two years later letting the group buy Whatsapp for around \$19 billion, the Federal Trade Commission characterizes the founder as an old-school monopolist (Ivanova, 2021). Indeed, while the FTC acknowledges that Facebook's monopoly is a result of the way the network markets develop, the company's practice of acquiring smaller companies that threaten its core business is what it considers abusive.

While in **Europe** there is absolutely no intention to dismantle them, this might pave the way for the European legislators to strengthen the rules of the DMA by adding more drastic measures on acquisitions. In fact, Germany, France, and the Netherlands have spoken out, saying that the DMA does not adequately address platforms that provide an ecosystem of services (Noyan, 2021). In Germany, the 10th amendment to the German Act against Restraints of Competition (GWB) came into force on January 19, 2021, with the aim of strengthening the response to abuse of dominance in the digital economy. A major change lies in Section 39(a), which gives the BKA (Bundeskriminalamt) the power to require companies to notify any future merger intentions, even if the merger thresholds are not met. The notification order is possible if "*the worldwide turnover of the undertaking concerned was more than EUR 500 million in the last financial year*", if "*there are objectively verifiable indications that future mergers could substantially impede effective competition in Germany*", and if "*the undertaking supplies or*

*procures at least 15% of the goods or services in the sectors"* (GWB: section 39A). This measure appears to be intended to detect all potential hostile acquisitions/mergers. An additional merger control-related amendment, which might seem controversial with the above, is the significant increase in the threshold that triggers the obligation to notify a transaction - it must be notified if one company's domestic turnover is 50 million (previously 25 million) and the other's is 17.5 million (previously 5 million). According to Dr. Laura A. Stammwitz (2021), a consultant in European and German competition law specializing in mergers, this measure was taken in order to reduce the BKA's workload and focus its resources more purposefully on the most complex cases that have to be apprehended differently.

Under the current proposal of the DMA, the regulatory framework allows gatekeepers to remain vertically integrated, yet open their platforms to providers of alternative and complementary products/services, and share their aggregated data. This approach is reminiscent of the European telecom sector in the 1980s, when telecom operators could remain vertically integrated, on condition that they opened their networks to their rivals (De Streel, 2021). In fact, the DMA would require designated gatekeepers to notify the Commission of any M&A intention – under Article 12 of the DMA (See Appendix 1) – and these would be carefully analyzed and either prohibited or permitted. From this perspective, it is clear that the regulation increases the scope of merger and acquisition control, but questions arise as to whether the means and tools currently used to analyze mergers and acquisitions, once notified, are adequate for the digital landscape.

#### ***3.2.4. Concluding Remarks***

In conclusion, much of the criticism focuses on concerns about the implementation of overly burdensome regulations and their impact on innovation. However, I believe that, whether "in" the market or "for" the market, competition should be considered a priority because it provides an essential component for unleashing the incentives and opportunities for innovation. At the moment, only the biggest platforms are competing with each other, leaving no space for start-ups. Indeed, the recurrent constitution of unquestionable monopolies seems to have shaped the functioning of the digital economy. And if these huge technology companies will one day be overtaken by smaller ones, it is mostly a question of innovation, but to allow this, the DMA must set the stage. Also, I agree with Martin Peitz's emphasis on the importance of defining

relevant markets and market structures in order to properly address the concepts of dominance, market power and competitive constraints.

Finally, I believe that a closer look should be taken at the issue of what has been called “killer acquisitions”. The following section explores the concept in more detail, in relation to the digital economy, the effects they may have on competition and innovation, and a discussion of what may need to change in the near future regarding their review.

### **3.3.Mergers and Acquisitions control**

#### ***3.3.1. EU control on M&A***

As far as EU merger control is concerned, it took until the 21<sup>st</sup> September 1990 for the European Union to establish its first specific legal basis for the systematic review of mergers, acquisitions, and other forms of concentration. This first European Commission Merger Regulation (ECMR) was directed at the assessment of a possible significant lessening of competition resulting from the concentration. It aimed to ensure a level playing field and to establish a "one-stop shop" for the review of such mergers. The Commission's concern rested in preventing a company from gaining advantage to create or reinforce its dominant position as a result of expanding its product/service range, building up its financial strength, reducing its costs or cross-subsidizing its activities in separate markets. In addition, decision-making policy was watchful of the use of tying and bundling of various products to strategically foreclose competitors and capitalize on its dominant position across markets (Witt, 2022). The legal basis applicable is the following : Council Regulation No 139/2004 of 20 January 2004 on the control of concentrations between undertakings (the ECMR).

Recently, the study of the conglomerate impact has made a grand return, with the rise of the so-called "digital gatekeepers." This, according to Witt, can be attributed to two factors. The first one is the emergence of the digital ecosystem, which is composed of multi-product and multinational companies that, due to the market structure, have built interrelated ecosystems of complementary services. In the case of Google, the initial online search engine has grown and expanded to offer services related to photo, email, calendar management, cloud storage, messaging and more. A redefinition of the products considered as substitutes and complements is necessary in the context of M&A control. The second factor, as Witt (2022) discusses, is the observable acquisition frenzy of large technology companies; much of these firms' product extension can be attributed to acquisitions rather than organic development.

##### ***3.3.1.1. Current approach is not suitable***

The competent authority, i.e. the EC, is notified to carry out inspections of around three hundred mergers on an annual basis, across all markets and sectors. Other mergers perceived to be less important are referred to the competition authorities of the member states (European Commission, 2013).

The difficulty that the competition authorities have encountered is that the current notification threshold does not provide for **market contestability**, as threatening transactions have taken place without close enough oversight. Indeed, the Commission normally only investigates mergers that exceed a certain **turnover threshold**. Under the original Merger Regulation, which entered into force in 1990, the Commission has exclusive discretion to review mergers between companies that together have a worldwide turnover of at least EUR 5 billion and a respective turnover of at least EUR 250 million in the European Economic Area (European Commission, 2004).

However, in the digital economy, where competition has its own distinctive characteristics, including patterns such as winner takes all, network effects, multi-sided markets, rapid innovation, and heavy data flow, the difficulty of defining relevant markets complicates the review work. Indeed, not only is the classic distinction between horizontal and vertical mergers and acquisitions unclear and less relevant than before, but the line between complements and substitutes is harder to draw in this ecosystem, making standard competition analysis ill-suited.

*Facebook's acquisition of Whatsapp.*

One of Facebook's acquisitions illustrates the current problematic regime. Antitrust regulators are being criticized for being too lenient on Facebook's takeover of Whatsapp in 2014. Indeed, while on August 29, 2014, the European Commission was notified of the proposed US\$19 billion purchase merger, it was no later than October 3, 2014, that the Commission authorized the acquisition, arguing that the deal would not raise competition concerns. The EC's decision, focused on the three areas defining the relevant markets: (i) consumer communications services; (ii) social networking; and (iii) online advertising services, and the conclusion was that these companies were not considered to be close competitors (European Commission, 2014). Pitruzzella (2019), president of the Italian competition authority, raises the argument that the EC may have failed to consider one aspect of these digital businesses that could have turned the decision around. Indeed, he explains that access to and collection of a large amount and variety of data represents a competitive advantage that generates barriers to entry for startups that are not able to reach this data. He explains that the consideration of data is more than relevant in the assessment of the outcomes of mergers.

As Justus Herrlinger (2018), an antitrust lawyer for White & Case LLP in Germany, put it, it is this deal that triggered the new German law. Indeed, referring to merger rules, the new competition law presented in the previous section allows regulators to tightly look at data-driven transactions, and take into consideration access to valuable data when assessing the market power, or defining a new threshold.

The associated problem is that national merger control is inadequate to properly measure the consequences of mergers and acquisitions. The fact is that the assessment of Big Tech

acquisitions at the level of the Member States creates serious risks of distorting competition in the market and hindering the effective functioning of the internal market. An EU-wide perspective is central to preventing such distortion, as – in light of the Article 114 TFEU - a firm located in one Member State may gain a competitive advantage over its rivals located elsewhere, given the regulatory disparities between national laws. In some instances, the prohibition may hinder the facilitation of competition by eliminating the opportunity for an innovation to thrive. In the scenario where a merger or acquisition is approved, competition may also deteriorate as the dominant platform becomes more unassailable in the market and is protected from rivalry of an alternative business model (Franck, Monti & de Streel, 2021).

### *3.3.1.2. Responses established*

As a first step to address this issue, we can observe that an increasing fragmentation of national merger rules is emerging within the internal market. Indeed, while some member states such as Germany and Austria have already operated reforms into their merger law, others such as France, Italy and Ireland are planning on doing the same (Franck, Monti & de Streel, 2021). Indeed, the lack of scrutiny of killer acquisitions has been an area of concern in the past. At the time, and given the often low revenue of acquired companies, the German Federal Cartel Office was unable to review the transactions, prompting the question in the country as to whether certain transactions should be reviewed in terms of the value of the deal. In response, as of 2017, the latter and the Austrian Federal Competition Authority established a **transaction value threshold** to supplement the turnover threshold, which was not able to capture all relevant M&A transactions (Schrijvershof, van de Hel & Breithaupt, 2021).

As a second response, on September 11<sup>th</sup> 2020, Commissioner Vestager - vice president responsible of the EU's digital policy – announced that the European Commission was providing new guidance on its approach to the use of the referral mechanism set out in Article 22 of Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings. This new guidance is intended to further ensure that transactions that previously fell below the national merger control thresholds are henceforth reviewed under the EUMR if deemed necessary. The EC will now accept referrals from EU national competition authorities (NCAs) provided that the merger or acquisition affect trade between MS or threaten the effectiveness of competition within the territory of the country submitting the request (European Commission, 2021). In the context of this new guidance, it is

stated that the Commission (2020) aims to address "*in particular, transactions in the digital and pharmaceutical sectors*".

### ***3.3.2. Discussion on the effect of M&A on competition and innovation***

One narrative that has gained more and more attention - related to the effects of acquisitions on competition - lies in the belief that Big Tech's decisions of acquisitions are driven by efforts to eliminate high-potential rivals. There is an incentive for the incumbent to buy out an innovative start-up if the entry of the nascent company poses a competitive threat to the existing firm holding a dominant position (Bourreau & de Stree, 2020).

The counter view argues that acquisitions in digital markets have positive outcomes as they ease an efficient transfer of inputs and an acceleration of innovation capacities between the acquirer and the acquired firms. In addition, the possibility of being acquired also stimulates and encourages smaller firms to innovate in the first place. There has been a shift in business and exit models for startups from growing towards an IPO to being acquired by GAFAMs.

Post-acquisition, questions also arise about the effects of "killer acquisition" transactions on competition and innovation. However, defining all mergers and acquisitions as such would perhaps be mistaken and restrictive. Specifically regarding innovation, Cabral (2019) shares the belief that mergers and acquisitions do not always have a negative impact on it, and that a tightening of policy may actually worsen the innovation process in some cases. It helps to distinguish between complementary innovation (supported by acquisition) and substitute innovation (to be killed). Therefore, careful consideration and balancing of benefits and drawbacks is required. A link can in fact be made here with the telecommunications sector by way of illustration. Indeed, if we recall the dismantling to which AT&T was subjected, the U.S. government prohibited local natural monopolies from participating in potentially competitive segments such as long-distance telecommunications and information services. The idea behind that was that local Bells could enter these competitive markets once they had opened their local markets to competition. According to Gilbert (2021), this restriction partly contributed to impeding the innovation process as coordination between complementary firms was an advantage. Indeed, the ten-year delay in the establishment of voice messaging service could be attributed to this structural separation.

In the same vein, as we will discuss in more detail below, the very large platform sometimes have more interest to develop innovation than the acquired company, given some characteristics

listed below. Moreover, digital platforms and digital ecosystems are relatively new phenomena, and competition within and across digital ecosystems is not yet fully comprehended.

Before trying to understand and balance the effects on competition and innovation, let's recall that these mergers and acquisitions sometimes appear as the only option. As Estelle Dierckx explained during our interview revolving around the topic of the pharmaceutical sector and the feasible links with the digital sector, she stated that among all companies that invest in research, many are sponsored by Big Pharma. The reason being that all these small companies that make research are not equipped to commercialize their product, nor have the means to pay back the costs of 15 years of research. In other words, the main reason why companies that focus on research more often than the opposite get swallowed up by the big guys, is also because they don't have the ability to commercialize at the same speed and to the same extent. Clearly, big companies already have the connections needed to make the project work with the doctors and patients, and a large workforce is also important to bring a project to life, screen it and everything. Beside financial means, while in the pharmaceutical industry it is the access to doctors, workforce, customers that is required for a drug to be successfully implemented, in the digital industry it is the access to network of users.

In addition, all forms of pharmaceutical processes are highly regulated, which constitutes a barrier to innovation. Smaller companies are not in a position to ensure that everything is really done right and that no risk is taken for the patient. She argues that innovation not only takes time, but above all, companies need to be agile and flexible to go through these processes, and large companies are obviously more agile and flexible given their network, workforce, experience, etc.

#### *3.3.2.1. Orientation of innovation [From earlier aim to go public to M&A]*

IPOs and acquisitions have the same investment objective, as they both allow small private companies to raise capital, either by selling their stakes to public investors or to a larger company whose goal may be more unclear to define within the context of the transaction. Lately, there seems to have been a trend towards M&A at the expense of IPOs, especially in technology-related sectors.

One of the rationale lies in the fact that these sectors are highly subject to globalization and fast evolution, making rapid growth essential for a firm to survive (Fashey, 2017). In addition, combining the innovation of the start-up with the scale of the big firm can yield synergies that make the acquisition more desirable from the perspective of the acquired business. Also, the

IPO market is much more asymmetric in terms of information. According to Bayar (2006), in industries where market share is divided by only a few large players, and thus in industries characterized by a higher level of concentration, the likelihood of firms going public decreases relative to the probability of engaging in M&A activity. This believably rests on the tendency of tech markets to tip, leaving companies with more difficulties to compete with incumbents – creating kill zones. Also, the decision to compete “in” the market or “for” the market – as will be further developed – provides once again a plausible explanation for the choice between IPO and M&A activity. Finally, the M&A exit route has been facilitated by the limited oversight of start-up acquisitions, which is explained by lawmakers' long-held belief that emerging companies are unlikely to significantly increase the acquirer's market power, given their respective size.

With regards to only mergers and acquisition, allowing mergers and acquisitions in the digital field, with prior notification to the Commission, has the effect of promoting innovation; encouraging small companies to be taken over. A clear incentive lies in startups awareness of the tendency of the digital markets to tip. Therefore, the most relevant way for these to contribute to consumer welfare improvement and added-value might be found in orientating their innovation efforts in directions that maximize its future acquisition value. Indeed, the compatibility between their innovative products and services and existing platforms likely to buy them out constitute a rationale to innovate. In parallel with this market-tipping tendency, new entrants may also lack the financial resources to implement and enable the development of their technology, leaving them with no choice but to pursue an acquisition, which would enable them to overcome these constraints. Furthermore, if the incumbent platform intends to buy the new entrant, the new entrant will negotiate the purchase price to at least compensate for the profit it could have made if it had decided to go public, the reason probably being that the market is not contestable. Considering that the price will generally be above the expected profit in the case of initial public offering, the nascent company will face a greater incentive to innovate if it anticipates an acquisition than in the opposite situation where mergers and acquisitions would not be allowed (Rasmusen, 1988).

Yet, while an active takeover market is likely to promote innovation at the startup level, the result will be quite different when it comes to the large firm. It is expected that the more small firms compete for a merger deal with the incumbent, the more decline in in-house investment and innovation by the large firm will be observed, with outsourcing of R&D proving to be more optimal.

To wrap up, imposing more restrictive merger and acquisition policy might favor a certain type of innovation. Note that according to the firm's aim to go public or get acquired, its innovation efforts might follow different directions. If a company's objective is to go public, its innovation efforts are going to be directed towards a disruptive type of innovation, which could be representative of Schumpeter's theory where the start-up would compete shoulder-to-shoulder with the dominant platform. If, on the contrary, the entrepreneur creates and grows its start-up with the purpose of selling it out to a large publicly traded firm, its innovation orientation will be towards incremental types of innovation, meaning offering new systems or services that are compatible with the incumbent's ecosystem and improve it. In conclusion, we note that while a stricter M&A ban could have a negative effect on the innovation incentives of a large portion of startups - which would lose their acquisition opportunity and worsening the situation for consumers by ruining the cycle - the opposite reasoning is viable, according to which we could see a new wave of disruptive innovation, with a replacement of the major players.

#### 3.3.2.2. Substitutability vs complementarity

The underlying value proposition of an innovation, which consists of providing the market with products/services that are substitutable or complementary to the existing offering, is a key element in assessing the magnitude of the effects of a start-up invention on competition and innovation.

If the new company is not constitutive of a source of competitive threat, acquisitions could still be observed, but for different reasons. Indeed, the existence of complementarities between the start-up's offering and that of the incumbent could make the transfer of inputs and technologies the most beneficial solution for both parties. Whether it concerns the lack of creative capabilities of Big Tech or the lack of funding for start-ups, acquisitions and mergers may yield positive effects by facilitating and accelerating the deployment of innovation. (Bourreau & de Streel, 2020). Furthermore, in such cases whereby complementary products or services can be integrated into the business environment of the main player, the takeover is likely to have a positive impact on consumer welfare ; the focus of the innovation will be directed accordingly. The interview with Estelle Dierckx allows for a better understanding of this matter, with a view on the pharmaceutical industry, where the same occurs. With respect to the benefits of acquiring complementary products, she also made a link with her company which focuses on a certain type of diseases. In this case, patients tend to combine or switch drugs, therefore it's more than

interesting for the patients if the drug development firm has in its portfolio drugs that are interchangeable and combinable. Furthermore, she clarifies that with regard to acquisitions in the pharmaceutical industry, Big Pharma, before distinguishing between substitutes and supplements, rather looks at whether or not the product in question appears in a market to which it has access.

Conversely, if the new proposal constitutes a substitutable offer to the dominant platform's one, the outcome might lie in a potential migration of users away from the existing platform. In this second case, the incentive to innovate is designed to take over the monopoly, thus with a view to compete “for” the market. In light of the discussion – substitutability versus complementarity –, the term "killer acquisition" originates from the concept of the "replacement effect" developed by Arrow (1962). The theory rationalizes that, in the case where the innovation represents a close substitute for the incumbent's products or services, the latter has little incentive to bring it to life. Indeed, the strategy of the existing dominant firm to eradicate any competitive threat could be in acquiring the small firm and abandon its innovation, as cannibalization would reduce profit gains. In fact, the dominant platform will generally face strong impetus to make a killer acquisition if the cannibalization of the sales of its current product/service by the new product/service is greater than the revenue it can generate (Bourreau & de Streel, 2020).

For the sake of illustration, Cunningham, Ederer and Ma in their analysis provide an example of a killer acquisition that took place between substitutable companies: Questcor Pharmaceuticals Inc.'s acquisition of the drug Synacthen from Switzerland's Novartis International AG. While the former held a monopoly in the United States in 2000 with its product Acthar, the latter began developing its synthetic version of the drug. Since Novartis could have offered a cheaper alternative to the drug and taken market share away from Questcor, it decided to purchase the production rights for Synacthen and discontinued its development. They also find that projects acquired by existing companies with overlapping drugs are twenty-three percent less likely to be pursued than those that do not constitute substitutes.

One of the limitations here is the difficulty, in two-sided markets, of taking both sides into account. Indeed, some products or services may be substitutes on one side (e.g. advertising) but not on the other (e.g. social networking). Moreover, products/services that are imperfect substitutes or complements also compete dynamically for user demand. Indeed, using as a

baseline conventional static market structure and not paying attention to this nuance of digital markets could lead to defining many acquisitions as either vertical or horizontal, without accounting for the other dimension (OECD, 2020).

#### *3.3.2.3. Demand-side / Supply-side synergies*

Recalling the discussion of the "replacement effect", it is essential to keep in mind that the reverse situation could also apply. Indeed, the incumbent may have more interest in developing the innovation than the entrant, particularly in the presence of synergies. There may be economies of scope between the new product/service and the incumbent's offering, which generates supply-side synergies. Likewise, complementing the incumbent's offering with the new product may introduce demand-side synergies. Present supply-side and demand-side synergies between both companies' products/services, an acquisition provides a possible trade-off between the elaboration and diffusion of the innovation that can be fast-tracked, and the elimination of competition (Bourreau & de Strel, 2020).

#### *3.3.2.4. Competition "In" vs "For" the market*

Once again, according to the end goal of the competition, innovation incentives diverge. The point is to distinguish one from the other, in order to apply the appropriate rule in terms of mergers and acquisitions.

In my view, if small firms compete **in** the market with the aim of improving consumer welfare through the development of incremental and complementary innovations, authorities should consider the potential benefits brought by a potential acquisition and allow it. Considering mergers and acquisitions from the perspective of competition "in" the market, they deserve to be explored and given the benefit of the doubt for their potential to improve consumer welfare through the facilitation and acceleration of the innovation development.

On the contrary, I believe that when it comes to competing **for** the market, whereby firms compete to reach temporary market dominance, a stricter ban should be imposed in order to interfere and allow the Schumpeterian theory to occur. An example that applies in this respect is the acquisition Whatsapp by Facebook. Indeed, given Facebook's low capabilities to innovate, a reasonable thought would have been to consider that Whatsapp would have grown to become a fierce Facebook's competitor. A prohibition on merger would probably have left

the future of Facebook's dominant position in the hands of the competition game, perhaps leading to a new cycle of Schumpeterian disruption. There is every reason to assume that the acquisition may well have been motivated by the intention to remove competitive capabilities from the market (Petit & J. Teece, 2021).

The Schumpeterian argument does not imply that dominance is not a source of harm. In contrast, the importance of innovative company entry as a driving force of market performance justifies increased emphasis on damage to potential future rivals when evaluating acquisitions pursued by the technology giants (L. Katz, 2021).

#### *3.3.2.5. Interoperability*

In a discussion with Professor Belleflamme (2022), the measure on interoperability arose as another base for debate. Indeed, on the one hand this may discourage large companies from innovating since they have to share their discoveries and lose their pioneering advantage, as we have already explored in the DMA section. On the other hand, it may allow a smaller company to better integrate into the existing ecosystem and improve consumer welfare by providing higher value-added services/goods. It also can lead to benefits to the incumbent operator being offered potential acquisitions better suited to its business environment.

#### *3.3.3. Concluding remarks*

To put it briefly, we have to try to make a trade-off between the losses/gains of competition and innovation, and see what weighs more heavily in the balance. Indeed, in the case of M&A, it is often one that is privileged at the expense of the other and vice versa. Alternatively, they might go hand in hand, but again there will be a choice to be made at the level of competition and innovation respectively to favor competition "in" the market instead of "for", and breakthrough innovation instead of incremental, or vice versa in both cases. Limiting large acquisitions to killer acquisitions may be somewhat restrictive, given the collateral benefits that they may provide. A more thorough approach to M&A review in this sector should therefore be adopted.

My position is not necessarily that the M&A policy needs to be tightened. And this, with a vision on innovation essentially. Rather, it is the way in which M&A is reviewed that should be rethought. While I already see that the DMA is increasing the scope of M&A control by having to notify all mergers done by gatekeepers, I think that in addition to that, it is the tools used for the analysis of the case that need to be improved. As mentioned, some countries like

Germany and Austria have started to move in this direction, adding the "transaction value threshold". There is a realization that the traditional way of considering only turnover is no longer appropriate for the digital economy where part of the profit and market power of platforms is reflected in the possession of data, rather than solely in turnover.

## 4. Recommendations

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My goal is not to persuade policymakers to adopt or reject any of the rules listed in the DMA. Rather, as I notice that this regulatory framework involves profound adjustments in the way digital actors conduct their business, it is critical to measure the impacts on them, as well as on the overall European economy, before these rules are enacted. This section therefore provides some recommendations that have surfaced as a result of the literature review and analysis phases of this project.

### *EU vs US*

First and foremost, with regards to Europe's concern related to its current incapability to create and establish firms the way America does, it is imperative to create sufficient incentives for European entrepreneurs to move forward, to avoid that the European digital market be occupied only by non-European companies, and especially companies from China and the United States. In fact, the five most valuable companies in the European single market combined do not come close to the market value of one of the GAFAM companies (Statista, 2021). The dominance of US firms in the technology sector is attributed to several causes.

**Firstly**, one lies in the lack of public spending in the platform economy in Europe; an issue that was raised within the framework of the 'Recovery Plan for Europe'<sup>7</sup>. It is worth recalling that the emergence of such dominant platforms (GAFAM) is first and foremost the result of massive investments made by the American government in its start-ups from the fifties. The challenge that Europe is facing now of having to regulate Tech giants mainly from the United States and pretty soon from China as well, it is notably the result of past failures in terms of innovation and technology (Cédric O, 2021).

**Secondly**, in the same vein, Europe is heavily regulated in terms of trade restrictions, among other things. Indeed, start-ups may find it more difficult to develop in Europe than in the United States, for example by preventing European firms from using standard products such as computer hardware, and forcing them to develop their own high-cost prototypes (Minevich, 2021). This is also the case in the pharmaceutical industry, as Estelle Dierckx shared during the interview. In her view, the fact that the sector is so meticulously regulated is one of the main factors preventing the process and opportunities for innovation from running smoothly. Indeed,

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<sup>7</sup> European Union : To help repair the economic and social damage brought by the coronavirus pandemic [https://ec.europa.eu/info/strategy/recovery-plan-europe\\_en](https://ec.europa.eu/info/strategy/recovery-plan-europe_en)

she insisted on the fact that agility and flexibility are major components and linkages to innovation, and in the pharmaceutical sector, heavy regulations and the extremely complicated processes don't allow much flexibility on the part of the companies. This might be interesting to take into consideration when deciding upon a degree of regulatory intervention from the government.

**Thirdly**, the European Union has more than 449 million people living in its territory. However, these 449 million are present in a very fragmented market. Indeed, unlike China and the United States where the respective 1.4 billion and 239 million inhabitants all play by the same rules, in Europe the picture is different, and the fragmentation within the union (languages, regulations,...) is problematic at this level, both in terms of distortion, and inefficiencies. James Currier (2019), a Silicon Valley expert on growth and network effects, conducted a study of Internet companies and found that, on average, the network effect accounted for seventy percent of value creation in technology companies - the more participants, the stronger the market. Therefore, large continents like China and the US are more likely to leverage the benefits of network effects compared to Europe, where the market, despite being unique, is still very fragmented in its rules and power, and where policy objectives, approaches and standards diverge. This undoubtedly might prevent, in a way, companies to expand as efficiently and rapidly as in the United States or China. With this in mind, and from an institutional standpoint, the DMA must, and does, opt for centralized and harmonized enforcement of its rules at the EU level, instead of relying on traditional decentralized or parallel antitrust practices nationally. From these points of view, Europe's priorities should be to (i) intensify innovation in order to be able to compete with the world's two leading economic countries. In parallel, (ii) the legislator must be careful not to penalize European companies when it decides to regulate the sector, and (iii) legislators should focus on strengthening the unity of the Union, in order to give European companies the opportunity to grow and take advantage of the network effects that are of great potential, given the size of the population.

Taking into account these two items, it is clear that a framework that encourages innovation is needed first and foremost for SMEs to grow and compete with U.S. firms. And a necessary condition for small businesses to have the opportunity to innovate is to create a level playing field in terms of competition. Vice versa, for European companies to be internationally competitive, the framework must create the conditions for innovation in Europe.

I think that governments and companies in Europe should make it a priority to invest and spend on R&D to catch up. In this context, it seems relevant to me to mention the potential role and

opportunity that unicorn firms represent. Even if the recent history of digital has shown that China and the United States were the most successful and promising, this assumption only holds if one does not take into account the rapid increase in the number of so-called "unicorn" companies in Europe. A "unicorn" company is a privately held start-up with a value of more than \$1 billion. In fact, with \$121 billion in invested capital in 2021, roughly three times the amount raised in 2020, Europe has created 98 new unicorns, allowing the economic zone to surpass China in the number of billion-dollar companies created in its territory (Atomico, 2021). Nonetheless, the United States remains a leader in the technology sector, with venture capital investments steadily increasing, as the country has launched as many of these companies in one year as Europe has been able to produce in three decades (Kanetkar, 2021). But the efforts are paying off, as Atomico's annual State of European Tech 2021 report shows ; Europe is consolidating its place as a global tech player, comprising 65 of the 170 cities worldwide to host one or more unicorn companies (Gain, 2021).

Unicorn companies – valued at \$1 billion – are outside the scope of the DMA, which means that they would benefit greatly from the regulation, whether in terms of data accessibility or interoperability, and more. The DMA gives unicorn companies a chance to thrive. This proves that the European Union is home to a large number of startups, ready to compete "in" or "for" the market, and that lawmakers are right to insist on implementing regulations that establish the groundwork for them to ride the new wave of innovation. The digital transition of the global economy presents a huge opportunity for start-up ecosystems like Europe to redefine the rules of the online world. Indeed, despite the concentration of economic power held by Big Tech, **startups may be redistributing that power** based on their ability to grow faster than ever before (Dealroom, 2021).

On the second issue specifically, a common transatlantic approach to curbing big tech companies would be feasible given that Washington seems ready to tackle the same problem - given its investigations and fines. In fact, the U.S. Congress is discussing a series of bills that resemble to the DMA to certain extents (de Streel et al., 2022). On the one hand, U.S. politicians could claim that the Commission's decision to regulate according to a set of characteristics rather than on the basis of actual behavior may unfairly and unjustifiably discriminate against U.S. businesses (Broadbent, 2020). In this case, the tension might spill over into a joint approach as the US might perceive protectionist motives behind the DMA. On the other hand, Washington might as well support Europe in its attempt to rein in Big Tech, especially with the recent appointment of Lina Khan as chair of the Federal Trade Commission,

as Lina Khan's occupation centers around antitrust law, infrastructure industries law, and the antimonopoly tradition (Clarke, 2021). Moreover, the pursuit of parallel investigations of Facebook by the EU, UK and US reflects, according to Vestager, a new alignment and cooperation in policymaking to counter the considerable market power of large technology companies. European regulators embrace a new era of confidence under the leadership of U.S. President Joe Biden. Likewise, according to Biden administration officials, a joint effort will be critical to strengthening the U.S. regulatory response to the threat from the technology sector (Financial Times, 2021). In my view, the challenge for Europe to introduce a framework to control the operation of digital platforms on its territory is already ambitious. However, in the longer term, a joint approach should be further pursued and put at the forefront in order to strengthen the level playing field, to provide an opportunity to narrow the gap between the EU and the US technological dominance and to improve the welfare of users, through enhanced competition in and for the market. Moreover, as de Streel et al. (2022) highlight, platform users would benefit from regulatory consistency and coherence between legislative actions. In any case, interconnection of the rules internationally is more or less unavoidable. If we take as an example the way the world reacted to the European GDPR standards, we realized that all companies active on the international stage had no choice but to comply, and it rapidly became de facto world standard on privacy. We can expect the same situation to happen for the competition regulation (Wheeler, 2022).

### Regulation

It should be recalled that all regulation is intended to distort the market. The challenge, however, is to design it for the best and avoid over- or under-regulation, which can be detrimental. It is therefore of utmost importance to assess in advance whether the greatest risk lies in over-regulating or in under-regulating. European legislators are aware of this and realize the likelihood of mistakes. However, they have concluded that the consequences of inaction are greater than the inevitable errors (de Streel, 2022). In a nutshell, too much regulation might stifle innovation by Big Tech and therefore not provide society with the value-creation potential the platform was able to offer. On the other hand, as it is the case now, under-regulating digital platforms will lead to the market failures as well as the elimination of competition and loss of innovation by companies that use digital platforms. The difficulty is to draw a line between appropriate competition concerns generated by the rise of platforms like Big Tech, and unjustified accusations based on a misapprehension of the platforms' business model.

Antitrust law is suited to address competition issues in many different sectors. Nevertheless, legislators have long understood that some markets, which are inherently non-competitive, require additional regulation, as in the case of the **telecommunications sector and other network industries**. Our analysis clearly indicated that there were similarities between these sectors and that some features of these earlier regulatory schemes needed to be borrowed to properly manage the digital environment. However, even when considering the possibility of linking and building on the regulatory pathway of other network industries, regulators must further adapt it to take into consideration the complexity brought about by dynamic markets. I believe that it is always useful to draw inspiration from past experiences to face new emerging challenges and that, as Lavoisier is supposed to have said: "*Rien ne se perd, tout se transforme*". From this perspective, past legislators have already done most of the work in setting up regulations specific to network industries. It is now up to the next generation of decision-makers to adapt it to current market needs and different circumstances. As I noted in the relevant section, I believe that the most appropriate features of past network industry regulations for legislators to consider are those involving the ex-ante mechanism, interoperability, and the asymmetric scheme. Nonetheless, constantly changing market conditions and technological advances of this sector requires a high degree of flexibility from policymakers.

The proposed framework – **DMA** – is designed to complement the competition law enforcement. However, it is important to understand that it must not be considered as another additional competition tool, but rather as a different regulatory approach where requirements are stated upfront by legislators. Yet, these must take into consideration all parties in their regulatory intervention, and the viability of the platform as well. Law-makers should not lose sight of secondary objectives such as maximizing consumer welfare and promoting innovation in their regulation tailored at fulfilling the objectives of platform fairness and contestability.

Another challenge in the regulatory development process is the substantial information gap that remains between regulators and gatekeepers. Because of the structure of the market and its data-driven configuration, never before have regulators faced such a lack of information about the companies they are requested to monitor. I think that transparency will perhaps appear as one big challenge for regulators in their attempt to regulate Big Tech, and these will need the cooperation of the platforms in the process. Last but not least, the interpretation and application of the rule could prove problematic, calling into question the self-executing nature of this regulation. In this regard, as mentioned by de Streel et al. (2022), the establishment of strong

mechanisms for dialogue and coordination between the regulator and all relevant stakeholders will be more than necessary. The European Commission will play a substantial role in that. For the handover of antitrust cases from the current investigators to the EC to be effective, it will be crucial for the latter to ensure constant monitoring and to draw on its expertise.

In situations where there is a coexistence of (i) strong complementarities between the new company's offering and that of the incumbent, coupled with (ii) strong synergies between innovation capabilities, and (iii) interoperability obligations, takeovers by Big Tech deserve the indulgence of competition authorities who may want to balance a trade-off between competition and innovation before rushing to any conclusion, especially with regards to **Merger and Acquisitions**. The redefinition of specific rules that apply to the digital market is more than urgent. Players deserve the right to be aware of the law and obligations before taking actions. It may be considered unfair to instruct firms to compete fiercely under competition law, and once they have reached a position that is perceived as too successful, to tell them that they will be subject to pervasive regulation to facilitate redistribution of value, even though they are not defined as natural monopolies (J. Teece, Kahwaty, 2021).

A thorough way to tackle mergers and acquisition control is to ensure greater reversibility in merger reviews and remedies. With this in mind, we would be dealing with the antitrust mechanism on the basis of Article 102 TFEU, when the acquirer's transaction has demonstrated to have significantly impeded competition (Bourreau & de Streel, 2020). The DMA's current approach to promoting competition is more than relevant, especially with regards to killer acquisitions ; the more competition there is in the market, the less advantageous it will be for an incumbent to acquire companies with a view to restricting competition, since there will remain a whole series of other competitors. That said, I believe more light should be led on the matter within the framework, to fully apprehend and review the transactions. The first option, which is the one pursued by the DMA, is to render subject to M&A review any company that falls within the definition of gatekeeper, regardless of the type of acquisition involved. Under this possibility, a new notification threshold would supplement the existing one of the EU Merger Regulation. In cases where conditions are met for a reviewing, gatekeepers would be required to notify the European Commission of any concentration intention, and it would be this institution that would be in charge of assessing the acquisition or merger, under the EUMR – unchanged. However, the risk of this scenario is that it overlooks the inability of the current threshold for merger regulation to effectively capture detrimental activities towards competition. A second alternative, again in connection with the DMA, would be to introduce,

in the text, a new and distinct regime to review and control mergers and acquisitions of gatekeepers. This regime would be complementary to the existing EUMR review process and would rely on new techniques and tools to properly capture the effects of mergers and acquisitions, taking into account the digital characteristics of firms. As a result, it would effectively implement a dual system of control at the EU level when it comes to monitoring M&A transactions carried out by designated gatekeepers. As Franck, Monti and de Stree (2021) argue, this solution would simultaneously protect long-term interests such as contestability and fairness, and short-term standards promoting efficiency and consumer welfare. This complementarity allows for an alignment between the merger regime and that of the DMA. In the context of a specific DMA merger scheme, legislators should figure out a way to understand which products overlap with current offerings and which are complementary, in order to prevent acquisitions that are undertaken with the aim of protecting a company's market from potential competition. The challenge is the difficulty of capturing the relevant economic substitution patterns in the digital environment, as explained above.

**Overall**, the more specific recommendations that I would like to address are listed as follows:

- The priority should be to focus on the distinction between substitutability / complementarity as well as on competition for the market. The solution provided by the regulation could be - taking into account the blurred lines as to whether products/services are substitutes or not – to allow mergers and acquisitions of complementary assets and to prohibit mergers and acquisitions that involve substitutes. These could potentially grow and overtake monopolies; allowing mergers and acquisitions of substitutes will only result in not allowing the creative destruction to materialize. Stricter M&A regulation could even have a beneficial impact by encouraging companies to raise funds through an IPO and grow organically.
- Furthermore, the regulation does well to focus on creating a level playing field for all European companies on the one hand, and establishing a competitive and innovation-driven business environment for SMEs to develop to their full potential. Indeed, not only do new entrants stimulate innovation by their very own actions, but they also put pressure on incumbents to outdo themselves.
- Also, I believe that the question of market definition matters primarily in the attempt of regulating this digital environment. As explained above, digital platforms exhibit characteristics that blur the boundaries of a market that would otherwise be easy to define. It is therefore of the utmost importance to be able to understand what platforms

are doing and the markets in which they operate. The linkages and interdependencies between different markets are more than relevant, as is the competitive pressure exerted by a certain activity of a platform on other platforms in their core business.

Most importantly, if the platform is multi-sided, the benefits for all parties should be assessed in terms of access and integration of services, effectiveness of advertising, etc.

- In the same vein, it is acknowledged that there are very diverse business models among gatekeepers, therefore it is important to take this into account and to pay attention to it when applying the rules. Legislators will probably take advantage of the small number of companies that are actually going to be designated to pay even more careful attentiveness to them. And while stricter rules are imposed on them, it is appropriate to accord them the respect of thoroughly understanding their business models in their entirety.
- When it comes to digital, the ground rules for the game and monitoring are very new, especially when it comes to disclosure of information. With this in mind, I would urge legislators to be wary of headline figures for R&D inputs and outputs of GAFAM, as they may not be comprehensive and detailed enough for oversight purposes. This limitation comes back to the critical need for transparency in the digital field.
- In addition, I think that the concept of dynamic competition must, once again, be put forward in the redaction of the DMA, especially when it comes to the distinction between competition “for” the market or “in” the market. This is particularly important when competition authorities are trying to identify patterns of rivalry and anticompetitive conducts.
- I would also like to draw attention to the importance of considering the types of innovations in question, both in terms of the technological progress (incremental vs. breakthrough) and their effect on established business models (sustainable vs. disruptive). This requires a thorough analysis before imposing any restrictions.
- As a final word of advice, I would like to emphasize the need for a long-term emphasis to support and stimulate innovation. Short-termism is counterproductive to effective competition law. Policymakers should primarily shift their focus away from the traditional tools of antitrust economics, such as market definition, and pay more attention to a dynamic view of how market power is exploited, the conduct of business, and the impact of mergers and acquisitions on the strength of innovation in platform economies. In the same order of ideas, as it has been widely recognized, mistakes will

be made, and the challenge for law enforcement officials is to embrace the dynamism of the digital era in order to align their actions accordingly.

## 5. Conclusion

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The digital world is now present and indispensable in all aspects of society. Besides all the benefits it brings to society, especially in terms of innovation, some technology companies have become too big and their behavior raises competition issues. Regulation is unavoidable to tackle market failures, but if the "why" seems clear, the "how" remains an open matter. The fact is that in the US, legislators have not kept pace with the speed at which the digital economy evolves. So Europe has an opportunity to get ahead of the game in shaping its digital policy. Building on past experiences, such as the process of regulating the telecommunications sector, the European Commission, through the framework - Digital Markets Act - is working to ensure contestability and fairness in the market, putting an end to continued instances of abuse of dominance by large technology companies.

With respect to **competition**, it has been explored that competition "in" the market as well as competition "for" the market coexist in the digital economy and it is appropriate to establish regulations that favor both forms of competition. On the one hand, competition in the market takes place at four levels: (i) gatekeepers against business users on the platform, (ii) business users (SMEs) against each other in a product/service market, (iii) startups (challengers) against each other for the purpose of being acquired, and (iv) gatekeepers against each other in similar operational segments (e.g. advertising). On the other hand, competition for the market takes place at two levels: (i) gatekeepers against startups to become the market standard, and (ii) gatekeepers against each other in their ability to leverage their market power in related markets.

With respect to **innovation**, without questioning the important role that technology giants play in international R&D expenditures, the motivation for innovation by the giants and users has become misaligned. The key challenge for the European Commission is to ensure that not only are gatekeepers prevented from impeding or unfairly appropriating innovations generated by business users on their platforms, but also that they do not distort competition by swallowing up potential innovative rivals. Indeed, gatekeepers have progressively reallocated their resources from R&D to M&A, with the aim of competing for the market.

I believe that changes will be necessary in the near future to adapt the DMA as best as possible. This is something that legislators have understood, but to figure out what to improve, we need to field test the rules, as well as see how the target firms respond. One area that is likely to need

improvement is merger and acquisition control, which is being addressed to some extent by the DMA. However, it may require additional attention to deal with the uncertainties brought about by digitalization.

The most appropriate way to determine the adequate regulation is to make trade-offs between pro-competitive and anti-innovative aspects, and decide what brings the most value to society. In this regard, one of the main objectives of the DMA, or any other regulatory intervention, should be to allow Schumpeterian competition to take place. The rules should be understood as combating practices that create an uneven playing field between incumbents and new entrants. More broadly, the DMA should seek to protect (i) the competitive mechanism by which challenger firms disrupt the status quo with breakthrough innovations, and (ii) the competitive mechanism by which companies can provide innovative incremental offerings. The European Commission is setting the stage to drive the change, to redistribute the power not only between the digital companies, but also between economic areas.

### **5.1.Limitations**

Throughout the writing of this master's thesis, I encountered several limitations that bear consideration in the reading and understanding of this project.

As a first limitation, the fact that digital platforms are a relatively recent phenomenon, it has become apparent in the literature that most theories put forward by economists are more predictive than field-proven over time. This made it difficult to form an accurate opinion at the outset.

A second limitation I would like to highlight is obviously related to the time frame in which this thesis was written, relative to the state of the regulations. Indeed, as already mentioned, the drafted text was published in 2020 and voted in March 2022, but the final text has not been made available yet. That means that most of the comments on the DMA made in this thesis were based on the available draft. The difficulty also stemmed from the fact that I was unsure of which rules were relevant to consider in the analysis, not knowing if they would be included in the final text.

Third, as much as I tried to make meaningful connections between the online platform economy and previous network industries, it proved very difficult to draw on and build upon them given the fact that digital markets are so distinctive on so many levels. I truly believe that it is worthwhile to leverage the efforts of previous legislators on industries that share similarities with the online world. However, I quickly came to realize, while working on the topic that the questions in digital economy are different from those related to inefficient duplication of infrastructure, so the connections and inspirations are difficult to put together.

A fourth and final limitation that deserves attention concerns the qualitative nature of the methodology. The analysis and recommendations may be biased by the subjectivity of interpretations and beliefs. Indeed, despite a desire to remain as objective as possible, the difficulty of finding the right experts to interview, as well as the prevailing divergence of opinion, forced me to settle on one way of thinking rather than another in order to understand who would be the interesting people for me, and to stop going back and forth in my argumentation. Indeed, in the course of my research, I read many reports and evaluations of the DMA's parliamentary proposal. Among them, many contradicted the proposal and underlined the anti-innovative risks more than the potential pro-competitive effects - Aurélien Portuese, American and European competition law and economics, is one of them. I can also quote Christophe Carugati, PhD in law and economics on Big Data and competition law, who explains why, according to him, asymmetric ex-ante regulation is not only an inefficient solution but also an unfair one. Jebelli, Competition & Regulatory Counsel to the Computer & Communications Industry Association, is also amongst these, and is very critical of the anti-innovation aspect of having pre-designed gatekeepers – the very essence of the DMA after all. On the contrary, others rejected these criticisms, arguing that there is a balance to be found and always pros and cons to each story, but that ensuring contestability and fairness in markets was the priority. I believe the questions I had that were answered by Professor Hoernig, Professor Belleflamme, and Professor Peitz helped me form an opinion and position myself more concretely in the analysis of the DMA.

## 6. Appendices

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### Appendix 1 : Obligations of gatekeepers within the scope of the DMA

List of do's and don'ts from the proposal of the Digital Markets Act :

#### Chapter II

#### Gatekeepers

##### *Article 3*

##### *Designation of gatekeepers*

1. A provider of core platform services shall be designated as gatekeeper if:
  - (a) it has a significant impact on the internal market;
  - (b) it operates a core platform service which serves as an important gateway for business users to reach end users; and
  - (c) it enjoys an entrenched and durable position in its operations or it is foreseeable that it will enjoy such a position in the near future.
2. A provider of core platform services shall be presumed to satisfy:
  - (a) the requirement in paragraph 1 point (a) where the undertaking to which it belongs achieves an annual EEA turnover equal to or above EUR 6.5 billion in the last three financial years, or where the average market capitalisation or the equivalent fair market value of the undertaking to which it belongs amounted to at least EUR 65 billion in the last financial year, and it provides a core platform service in at least three Member States;

- (b) the requirement in paragraph 1 point (b) where it provides a core platform service that has more than 45 million monthly active end users established or located in the Union and more than 10 000 yearly active business users established in the Union in the last financial year;

for the purpose of the first subparagraph, monthly active end users shall refer to the average number of monthly active end users throughout the largest part of the last financial year;

- (c) the requirement in paragraph 1 point (c) where the thresholds in point (b) were met in each of the last three financial years.

- 3. Where a provider of core platform services meets all the thresholds in paragraph 2, it shall notify the Commission thereof within three months after those thresholds are satisfied and provide it with the relevant information identified in paragraph 2.. That notification shall include the relevant information identified in paragraph 2 for each of the core platform services of the provider that meets the thresholds in paragraph 2 point (b). The notification shall be updated whenever other core platform services individually meet the thresholds in paragraph 2 point (b).

A failure by a relevant provider of core platform services to notify the required information pursuant to this paragraph shall not prevent the Commission from designating these providers as gatekeepers pursuant to paragraph 4 at any time.

- 4. The Commission shall, without undue delay and at the latest 60 days after receiving the complete information referred to in paragraph 3, designate the provider of core platform services that meets all the thresholds of paragraph 2 as a gatekeeper, unless that provider, with its notification, presents sufficiently substantiated arguments to demonstrate that, in the circumstances in which the relevant core platform service operates, and taking into account the elements listed in paragraph 6, the provider does not satisfy the requirements of paragraph 1.

Where the gatekeeper presents such sufficiently substantiated arguments to demonstrate that it does not satisfy the requirements of paragraph 1, the Commission shall apply paragraph 6 to assess whether the criteria in paragraph 1 are met.

- 5. The Commission is empowered to adopt delegated acts in accordance with Article 37 to specify the methodology for determining whether the quantitative thresholds laid down in paragraph 2 are met, and to regularly adjust it to market and technological developments where necessary, in particular as regards the threshold in paragraph 2, point (a).

- 6. The Commission may identify as a gatekeeper, in accordance with the procedure laid down in Article 15, any provider of core platform services that meets each of the requirements of paragraph 1, but does not satisfy each of the thresholds of paragraph 2, or has presented sufficiently substantiated arguments in accordance with paragraph 4.

For that purpose, the Commission shall take into account the following elements:

- (a) the size, including turnover and market capitalisation, operations and position of the provider of core platform services;
- (b) the number of business users depending on the core platform service to reach end users and the number of end users;

- (c) entry barriers derived from network effects and data driven advantages, in particular in relation to the provider's access to and collection of personal and non-personal data or analytics capabilities;
- (d) scale and scope effects the provider benefits from, including with regard to data;
- (e) business user or end user lock-in;
- (f) other structural market characteristics.

In conducting its assessment, the Commission shall take into account foreseeable developments of these elements.

Where the provider of a core platform service that satisfies the quantitative thresholds of paragraph 2 fails to comply with the investigative measures ordered by the Commission in a significant manner and the failure persists after the provider has been invited to comply within a reasonable time-limit and to submit observations, the Commission shall be entitled to designate that provider as a gatekeeper.

Where the provider of a core platform service that does not satisfy the quantitative thresholds of paragraph 2 fails to comply with the investigative measures ordered by the Commission in a significant manner and the failure persists after the provider has been invited to comply within a reasonable time-limit and to submit observations, the Commission shall be entitled to designate that provider as a gatekeeper based on facts available.

7. For each gatekeeper identified pursuant to paragraph 4 or paragraph 6, the Commission shall identify the relevant undertaking to which it belongs and list the relevant core platform services that are provided within that same undertaking and which individually serve as an important gateway for business users to reach end users as referred to in paragraph 1(b).
8. The gatekeeper shall comply with the obligations laid down in Articles 5 and 6 within six months after a core platform service has been included in the list pursuant to paragraph 7 of this Article.

#### *Article 4*

##### *Review of the status of gatekeepers*

1. The Commission may upon request or its own initiative reconsider, amend or repeal at any moment a decision adopted pursuant to Article 3 for one of the following reasons:
  - (a) there has been a substantial change in any of the facts on which the decision was based;
  - (b) the decision was based on incomplete, incorrect or misleading information provided by the undertakings.
2. The Commission shall regularly, and at least every 2 years, review whether the designated gatekeepers continue to satisfy the requirements laid down in Article 3(1), or whether new providers of core platform services satisfy those requirements. The regular review shall also examine whether the list of affected core platform services of the gatekeeper needs to be adjusted.

Where the Commission, on the basis of that review pursuant to the first subparagraph, finds that the facts on which the designation of the providers of core

platform services as gatekeepers was based, have changed, it shall adopt a corresponding decision.

3. The Commission shall publish and update the list of gatekeepers and the list of the core platform services for which they need to comply with the obligations laid down in Articles 5 and 6 on an on-going basis.

*Article 5*  
*Obligations for gatekeepers*

In respect of each of its core platform services identified pursuant to Article 3(7), a gatekeeper shall:

- (a) refrain from combining personal data sourced from these core platform services with personal data from any other services offered by the gatekeeper or with personal data from third-party services, and from signing in end users to other services of the gatekeeper in order to combine personal data, unless the end user has been presented with the specific choice and provided consent in the sense of Regulation (EU) 2016/679. ;
- (b) allow business users to offer the same products or services to end users through third party online intermediation services at prices or conditions that are different from those offered through the online intermediation services of the gatekeeper;
- (c) allow business users to promote offers to end users acquired via the core platform service, and to conclude contracts with these end users regardless of whether for that purpose they use the core platform services of the gatekeeper or not, and allow end users to access and use, through the core platform services of the gatekeeper, content, subscriptions, features or other items by using the software application of a business user, where these items have been acquired by the end users from the relevant business user without using the core platform services of the gatekeeper;
- (d) refrain from preventing or restricting business users from raising issues with any relevant public authority relating to any practice of gatekeepers;
- (e) refrain from requiring business users to use, offer or interoperate with an identification service of the gatekeeper in the context of services offered by the business users using the core platform services of that gatekeeper;
- (f) refrain from requiring business users or end users to subscribe to or register with any other core platform services identified pursuant to Article 3 or which meets the thresholds in Article 3(2)(b) as a condition to access, sign up or register to any of their core platform services identified pursuant to that Article;
- (g) provide advertisers and publishers to which it supplies advertising services, upon their request, with information concerning the price paid by the advertiser and publisher, as well as the amount or remuneration paid to the publisher, for the publishing of a given ad and for each of the relevant advertising services provided by the gatekeeper.

*Article 6*

*Obligations for gatekeepers susceptible of being further specified*

1. In respect of each of its core platform services identified pursuant to Article 3(7), a gatekeeper shall:
  - (a) refrain from using, in competition with business users, any data not publicly available, which is generated through activities by those business users, including by the end users of these business users, of its core platform services or provided by those business users of its core platform services or by the end users of these business users;
  - (b) allow end users to un-install any pre-installed software applications on its core platform service without prejudice to the possibility for a gatekeeper to restrict such un-installation in relation to software applications that are essential for the functioning of the operating system or of the device and which cannot technically be offered on a standalone basis by third-parties;
  - (c) allow the installation and effective use of third party software applications or software application stores using, or interoperating with, operating systems of that gatekeeper and allow these software applications or software application stores to be accessed by means other than the core platform services of that gatekeeper. The gatekeeper shall not be prevented from taking proportionate measures to ensure that third party software applications or software application stores do not endanger the integrity of the hardware or operating system provided by the gatekeeper;
  - (d) refrain from treating more favourably in ranking services and products offered by the gatekeeper itself or by any third party belonging to the same undertaking compared to similar services or products of third party and apply fair and non-discriminatory conditions to such ranking;
  - (e) refrain from technically restricting the ability of end users to switch between and subscribe to different software applications and services to be accessed using the operating system of the gatekeeper, including as regards the choice of Internet access provider for end users;
  - (f) allow business users and providers of ancillary 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;
  - (g) provide advertisers and publishers, upon their request and free of charge, with access to the performance measuring tools of the gatekeeper and the information necessary for advertisers and publishers to carry out their own independent verification of the ad inventory;
  - (h) provide effective portability of data generated through the activity of a business user or end user and shall, in particular, provide tools for end users to facilitate the exercise of data portability, in line with Regulation EU 2016/679, including by the provision of continuous and real-time access ;
  - (i) provide business users, or third parties authorised by a business user, free of charge, with effective, high-quality, continuous and real-time access and use of aggregated or non-aggregated data, that is provided for or generated in the context of the use of the relevant core platform services by those business users

and the end users engaging with the products or services provided by those business users; for personal data, provide access and use only where directly connected with the use effectuated by the end user in respect of the products or services offered by the relevant business user through the relevant core platform service, and when the end user opts in to such sharing with a consent in the sense of the Regulation (EU) 2016/679; ;

- (j) 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 anonymisation for the query, click and view data that constitutes personal data;
  - (k) apply fair and non-discriminatory general conditions of access for business users to its software application store designated pursuant to Article 3 of this Regulation.
2. For the purposes of point (a) of paragraph 1 data that is not publicly available shall include any aggregated and non-aggregated data generated by business users that can be inferred from, or collected through, the commercial activities of business users or their customers on the core platform service of the gatekeeper.

#### *Article 7*

##### *Compliance with obligations for gatekeepers*

1. The measures implemented by the gatekeeper to ensure compliance with the obligations laid down in Articles 5 and 6 shall be effective in achieving the objective of the relevant obligation. The gatekeeper shall ensure that these measures are implemented in compliance with Regulation (EU) 2016/679 and Directive 2002/58/EC, and with legislation on cyber security, consumer protection and product safety.
2. Where the Commission finds that the measures that the gatekeeper intends to implement pursuant to paragraph 1, or has implemented, do not ensure effective compliance with the relevant obligations laid down in Article 6, it may by decision specify the measures that the gatekeeper concerned shall implement. The Commission shall adopt such a decision within six months from the opening of proceedings pursuant to Article 18.
3. Paragraph 2 of this Article is without prejudice to the powers of the Commission under Articles 25, 26 and 27.
4. In view of adopting the decision under paragraph 2, the Commission shall communicate its preliminary findings within three months from the opening of the proceedings. In the preliminary findings, the Commission shall explain the measures it considers to take or it considers that the provider of core platform services concerned should take in order to effectively address the preliminary findings.
5. In specifying the measures under paragraph 2, the Commission shall ensure that the measures are effective in achieving the objectives of the relevant obligation and proportionate in the specific circumstances of the gatekeeper and the relevant service.
6. For the purposes of specifying the obligations under Article 6(1) points (j) and (k), the Commission shall also assess whether the intended or implemented measures ensure that there is no remaining imbalance of rights and obligations on business

users and that the measures do not themselves confer an advantage on the gatekeeper which is disproportionate to the service provided by the gatekeeper to business users.

7. A gatekeeper may request the opening of proceedings pursuant to Article 18 for the Commission to determine whether the measures that the gatekeeper intends to implement or has implemented under Article 6 are effective in achieving the objective of the relevant obligation in the specific circumstances. A gatekeeper may, with its request, provide a reasoned submission to explain in particular why the measures that it intends to implement or has implemented are effective in achieving the objective of the relevant obligation in the specific circumstances.

*Article 12*

*Obligation to inform about concentrations*

1. A gatekeeper shall inform the Commission of any intended concentration within the meaning of Article 3 of Regulation (EC) No 139/2004 involving another provider of core platform services or of any other services provided in the digital sector irrespective of whether it is notifiable to a Union competition authority under Regulation (EC) No 139/2004 or to a competent national competition authority under national merger rules.  
  
A gatekeeper shall inform the Commission of such a concentration prior to its implementation and following the conclusion of the agreement, the announcement of the public bid, or the acquisition of a controlling interest.
2. The notification pursuant to paragraph 1 shall at least describe for the acquisition targets their EEA and worldwide annual turnover, for any relevant core platform services their respective EEA annual turnover, their number of yearly active business users and the number of monthly active end users, as well as the rationale of the intended concentration.
3. If, following any concentration as provided in paragraph 1, additional core platform services individually satisfy the thresholds in point (b) of Article 3(2), the gatekeeper concerned shall inform the Commission thereof within three months from the implementation of the concentration and provide the Commission with the information referred to in Article 3(2).

*Article 13*

*Obligation of an audit*

Within six months after its designation pursuant to Article 3, a gatekeeper shall submit to the Commission an independently audited description of any techniques for profiling of consumers that the gatekeeper applies to or across its core platform services identified pursuant to Article 3. This description shall be updated at least annually.

## **Appendix 2 : Record of the interview with Paul Belleflamme [1<sup>st</sup> April 2022 / 11am-12am]**

Paul Belleflamme is a Professor of Economics at UCLouvain, where he is affiliated with the Center for Operations Research and Econometrics (CORE) and the Louvain School of Management (LSM). His current research area is theoretical industrial organization, with a focus on innovation in the digital economy. He has published numerous articles in economic journals and, in partnership with Martin Peitz, is the author of the recently published book "The economics of platforms".

I opened the interview by explaining in a few words the purpose of my thesis and the direction I have taken so far, namely the analysis of digital platforms, as well as their need to be regulated from a competition point of view, with an attentive view on innovation. I mention my comparison with natural monopolies, as well as the DMA framework currently being voted on.

The first comment he shared with me was about the section on **natural monopolies**. After having shared with him my concerns about a potential erroneous comparison between digital platforms and the notion of natural monopoly, Mr. Belleflamme shared his opinion with me. According to him, it is interesting to make a comparison with this concept. Indeed, he even shared that it could have been the subject of a thesis in itself; analyzing the similarities and differences between the two. He adds that it is always useful to compare an object of analysis with the basis of something that already exists and in this case that has been regulated.

However, he reminds me of the definition of natural monopoly and insists on the notion of "physical" which is not the case with the digital market. He advises me not to neglect this point of divergence, but that the tendency of digital markets to converge/concentrate naturally (struggling to find another word) and inevitably, from a consumer benefit point of view, is strongly reminiscent of the concept of natural monopoly, and that it would indeed be wise to explore this path. Having shared with him my research question at that point; "To what extent are digital markets condemned to the formation of natural monopolies, and how to regulate them from a competition point of view without hindering innovation?", he warned me that the reference to natural monopoly would be more correct as a sub-question, to support my arguments, rather than as a main research question. He ended his comment on this section by explaining that monopolies on digital markets seem desirable, especially in relation to network effects, but that it is the abuse of a dominant position that really poses a problem, and that the amalgam should not be made.

The next topic discussed was what legislators call "**killer acquisitions**", and I asked Mr. Belleflamme to what extent it is interesting to elaborate on this topic, taking into account my focus on the competition/innovation balance.

\_\_The first point he makes is his disagreement with the notion of "killer", in fact according to him we don't know the final and definitive effect of these acquisitions. Especially with a focus on innovation, Paul tries to make me understand that the effect when it comes to innovation of these acquisitions are in fact unknown. The question is whether, when Big Tech swallows the SME, it does so to eliminate potential competition that, in the long run, could have generated innovation-related benefits, or whether, on the contrary, Big Tech's intention to buy out small innovative companies would not rather constitute an incentive for them to innovate, which would be eliminated in the event of an acquisition ban. It happens that the SME are well aware of the tendency of the digital markets to tip, and that therefore their ultimate goal is to innovate their products and services in a compatible way with the existing platforms, with the objective of being acquired by the companies having the financial means to implement and enable the occurrence of these.

\_\_He explains that, with respect to the notion of innovation, we face a competition "in" and "for" the market, and that both must be taken into account. Indeed, he mentions the incentive for innovation that occurs "for" the market, in the race to become the dominant platform, but that once it has tipped, stops innovating. On the other hand, we have the SMEs that compete "in" the market, whose incentive innovation comes from their desire to be acquired. It is once the big tech has acquired the innovative SME that the benefits on consumers come because the innovation is implemented in an integrated way on the ecosystem they know. In other words, Big Tech often doesn't have the creativity to innovate further so they have to give buyout incentives to smaller companies that allow them to increase the value derived from consumers. The risk for the latter is that by prohibiting these buyouts, companies that aim to be bought out will stop innovating and the cycle will be ruined, and by the same token consumers will be left worse off.

\_\_Mr. Belleflamme also suggests me to focus on the famous "complementarity/substitutability" debate and based on that to understand if "killer acquisitions" contribute more to increase the value extracted from consumers thanks to the addition of innovative products/services integrated in the GAFA ecosystem, or rather to kill an SME proposing a substitute, which in this case would lead to a potential migration of users away from the existing platform. In conclusion, the discussion led to the understanding that either SME innovate to complement the existing offer and know that it will not be relevant to replace the offer so their goal is the

acquisition, or if the goal is to disrupt the market and provide a substitute product/service, in which case the incentive innovation occurs to take over the monopoly. The discussion above ends with the validity of Schumpeter's theory in this case. He gives the example of Kodak which was replaced by digital cameras. In this case, the dominant technology was overtaken by a technology that really revolutionized the system, so in the case of GAFAM, we can ask ourselves if Metaverse could be the object of the next creative destruction.

\_\_We mentioned the interoperability rule, which on the one hand discourages large companies from innovating since they have to share their findings and lose their pioneering advantage, but on the other hand allows SMEs to better adapt to the existing ecosystem and provide higher value-added services/goods, thus improving consumer welfare.

\_\_The real question, which he admits is difficult to answer, is to understand whether it is more efficient and desirable if innovations come from within through the acquisition of the SME, or whether it is better to create a favorable ecosystem for the growth of the SME to come to a migration of the users from the old platform to the new.

For the final word, I concluded by trying to wrap up everything that has been said, namely that Schumpeter's theory seems to be able to address competition "for" the market, whereas competition "in" the market should be regulated more firmly and finally to weigh the potential impact of acquisitions on innovation.

He ends the interview by advising me not to be too ambitious and to choose a point of focus from now on: it could be acquisitions.

→ The DMA does not appear to impose a strict ban on such acquisitions, except that vlops will now have to inform the Commission before conducting a takeover. In terms of striking the right balance between competition and innovation, buyouts in digital markets deserve close consideration.

### **Appendix 3 : Record of the seminar with Martin Peitz [28<sup>st</sup> April 2022 / 16pm-17pm]**

I had the opportunity to participate in a seminar given by Martin Peitz, during which not only I had the opportunity to better apprehend certain concepts, but also I was able to ask some questions to which the speaker answered. The key leanings from this seminar had to do with consumer behavioral biases, gatekeeper incentives, the way platforms monetize their activity across different segments, and market definition/power. The topic of the presentations was antitrust markets in the digital environment with a focus on how to define markets in the context of multisided platforms.

Martin Peitz is a Professor of Economics at the University of Mannheim. He is also a Director of the Mannheim Centre for Competition and Innovation. His policy research focuses on digital markets, regulation, and competition economics. Martin holds a PhD in Economics from the University of Bonn.

Martin Peitz :

From an economist's perspective, there are good reasons to think about market definition and the constraints under which companies operate. In the context of digital platforms, where the environment is very complex, it is important to understand the relationships between cross-group network effects, connections of different products in bundles, or vertical/horizontal connections. This is more difficult in this context than in others, and therefore it is important to define the market properly. We need to understand what products and services we are dealing with, whether they are substitutes, complementary products, and so on.

One key takeaway he insists on is that a focus on distribution channel may lead to a market definition that is too narrow.

Still on the topic of market definition, and market power, Professor Peitz explains that on digital platforms, we identify separate user groups, and since we have linkages between different activities and services, it is impossible to have a single market share metrics on a dominance of a platform.

According to Martin, there is the need to assess substitution possibilities. Some firms compete for consumer attention with regards to advertising for example, and therefore may be put in the

same market, but these firms may include very different business models.

Also companies in the digital world have very different monetization models. For example, at the abstract level, dating platforms have very different monetization strategy, but at the viewpoint of the user, it has a clear service role : good match will realize. From the monetization strategy, users can participate on the platform for free, with advertising, by subscription, or sometimes other transactions are monetized.

In the past, studies continue to exist and distinction has been made between transaction platforms where a transaction between two sides of the platform takes place on the platform. And non-transaction platforms, and this point has been made in the context of market definition. Particularly some people have argued that for some transaction platforms, a single market on both sides should be defined, which is not the case on non-transaction platforms.

For non-transaction platform we are on common ground, everybody would agree that we have to define separate markets on multiple sides. However, restrict the investigation to this distinction may lead to ignoring the possibility that competitive constraints may also arise from the existence of non-transaction platforms (e.g. adv-funded vs transaction-funded vs subscription-funded). So we should not define markets based on business/monetization. It is important not to restrict the market to this feature, we want to include all substitutes in the investigation of the platform. A concrete example of this is Airbnb in its early days making inroads into this market for very short rentals, for vacation or business purpose. There was one established player – HomeAway – which was a very different transaction platforms because there the transactions were made outside the platforms, and offers were only listed on the platform. So what we had at that point was Airbnb as a transaction platforms competing against the other platform HomeAway. In the meantime HomeAway has evolved so that the distinction is no longer as it was but this example illustrates that some very different platforms in their business models such as transaction vs non-transaction platforms may coexist in the same market.

So it is important not to restrict a market based on the business or monetization model that is chosen by the platforms. Substitutes offers is what we should be looking at.

Let's take the concrete example of booking where the question arises what are actually are the substitution possibilities for consumers who want to book a hotel. At the abstract level there is two service provided by a platform such as Booking; on the one hand, it is a search tool for clients to look for alternative offers in a way that their search costs are low, and secondly, it facilitate the transaction with the hotel being made by the platform. There is also the case,

instead, of having this combination of service on the platform, the website directs the consumer to the website of the hotel to make the contract transacted on the hotel website.

Therefore we can wonder whether consumers have in terms of product/service, might find private apartments and hotels as alternatives, in which case Airbnb would be imposing some competitive constraints on booking.

Let's be more structured and talk about the multi-markets approach. If we have a two-sided platform, then this one make several proposal on each side on which it operates. These are very distinct services. Think about dating platforms, there is a complementarity and difference in offers targeted to men or women, in their respective perspective of finding a match.

Market must be defined on each side, for each relevant user group. It is not to say that the single market approach is necessarily wrong, however I would argue that the single market approach is problematic because, also for practical reasons, then what we are finding is a demand of some transaction service and this include the characteristics of users on both sides of the market. It must be apprehend the substitute constraints on both sides. Also it may happen that there is substitute constraint on one side and not on the other. And a natural approach is to always follow the multi-market approach because otherwise risk is that we may be overlooking interdependencies between these markets. Of course, going for a multi-market approach doesn't mean that markets are going to be analyzed independently, rather it is essential to think about the interdependencies that arise due to cross-group network effects.

Let me add homing decisions into the question of how to define market. We are now following the multi-market approach, where they may be multiple market on each side of a platform. And to understand whether we should start with a single or multiple market on one side, it's important to understand the homing decisions. We distinguish as the extreme environments one where there is single homing where consumers cannot be active on multiple platforms. This may be due to technological reasons or contractual reasons. And we distinguish that from the multihoming users where users at least have the option to consume multiple offerings. There is no restriction to multihome. One particular case is the situation of what is coined "competitive bottleneck" which is a situation where when one side of user single homes and the other side of users multi-homes. In that case, platforms of competing for the single homing users. Platform provides monopoly power over the users on the multi-homing side. Because the only way multi-homing users can reach users assigned to a platform is to interact through this platform.

This is a very extreme situation and in the real world we are not all potentially multi-homing etc but the question can always be asked : should a market be defined on the platform basis or across different platforms?

One important aspect, especially with regards to regulatory intervention, is that what we are observing is a status-quo. One way of intervening if we have exclusivity clauses on one side could be to encourage multihoming by going against exclusivity clauses, but we should understand that multi-homing decisions are endogenous. Therefore, it may reduce the incentive the decision to multi-home on other sides of the platform. Regulatory intervention may indeed affect homing decisions on other sides of a platform.

Moving on to the zero-price markets, it has been found kind of controversial by now but it is important to keep it in mind. There may be markets in which products are offered free of charge. One point that has been made by a number of legal scholars is that yes there are markets because users don't pay directly but they pay indirectly through their data and attention. My thought is that this is not useful. We should not think of this concept of remuneration. Rather, we should ask if this market is linked to a certain set of users in order to understand the business activity taking place on the market. If that is the case we could define the market. Therefore the concept of remuneration is not that important as we could have zero-price market on which there is no remuneration, and actually there might be exploitation of users who get a product for free. Indeed, users might be generating numerous other benefits to the platforms somewhere else. Therefore I would say to try to understand whether a certain group of user which is connected through a platform is important, and what makes it from their part that the platform is successful. This goes back to the European Microsoft abuse case, where it was stated that it is not necessary to pay a price for a product. So there may well be zero-price markets.

It is sufficient to understand that a platform's activity may become part of a broad of LT strategy to generate revenue.

Now let's look at the granularity of markets. In the digital world there is the issue about, not only the geographical aspect, but also the different subpopulation of users that are separately targeted or priced. If we think of social network as an example, advertisers constitute a major part. If we think about those people using the social network, it used to be a more homogeneous group. If we look back at the history of Facebook it was students from a particular university, and then it was opened to the student population. And even if it had restricted to students, people are very different and their behavior are different and very heterogeneous. Some people

essentially just view content whereas others are actually posting material, and this has borne a new job of being an influencer that has become a separate group that is being targeted by the platform. They receive monetary payments, and also non-price strategy... So clearly this has become a new market.

One important aspect that we have seen is that many of these restrictions on scale and scope have been overcome such that now Amazon has grown to be much more than a book seller, and we have these different markets on a single home platform. From a retail perspective we can ask whether or not is one-stop-shopping important. If this is so, it means that while there are separate markets, they are linked. Look at Amazon prime, at first it was only another added feature not especially used, and now it has become much more important within the business core of Amazon, so these linkages have to be taken into account and we must also pay attention to bundling and interdependency.

When we define markets with quantitative methods, we may want to use the SSNIP test and it has been argued that the SSNIP test cannot be used in multi-sided platforms. What is true is that there are new questions arising with regards to adjustments of prices, etc. they may also be questions about the profits. And this is particularly important for platforms and growing markets, we have these interoperable linkages which make it very difficult to figure out what the profit impacts are because it may be a too narrow focus. These interoperable linkages must be considered and looked at as cross-group network effects. Network effects between early users and their impact on late users – with respect to the attractiveness of the platform notably. A question therefore arising is how to deal with the SSNIP test when it comes to zero-price platform. We need to think about changing the benefits/costs from price to the eduction of privacy standards, the burden of advertising, etc. We need to rethink the tool and use it more as a concept tool rather than a quantitative one.

Let me conclude on what has been called the “Moligopoly”. Some of these Big Tech platforms, they have an oligopoly or nearly monopoly position for quite a number of activities but there is intense competition for another range of activities which is outside their core business. I think this is relevant for market definition, consumers being within the Apple world also use the Google world. And the question is about the linkage and interdependence across different market and to what extent does the competitive pressure for a certain activity also constraints other platforms in their core activities. This is how I would frame this debate about market

power. We need first to understand what are the first activities of the platforms, the market in which they operate!

My questions :

In your personal opinion, does Schumpeterian theory hold with regards to a possible disruption of Big Tech, in a “for” the market competition perspective ? Or your opinion stands more on the side that only strict regulation will redistribute power?

First I am an economist so my answer is “it depends”, I think it is a case by case analysis so important not only to look at the position of the platform for a certain activity but also how has this position changed over time.

There are some general lessons: If user tastes are changing over time or there is a lot of tech disruption over time, then I believe the competition for the market remains open. An example is that experts thought that Facebook essentially was out because how could they make money when people started using their mobile phone instead of computer, so the screen reduction and limited data was seen as killing Facebook. But clearly FB had to rethink about it. We saw that FB was challenged but succeeded to sustain monopoly, so that is the kind of competition that we want. In the case of Google search, these things were more difficult because the move to mobile phone was easy and not that disruptive, but they managed rather well to do it and even in a way it helped them because the visibility of some offers may have been reduced which increased the incentive to post and be visible as an advertiser. Now the question is, as we are moving to voice search, whether the advantage of Google will continue or if the market will be open again and there will be competition for the market.

I guess as a competition authority and the role of the DMA, my view is that we should enable for Schumpeterian competition to take place and therefore the regulation should go against practices that create asymmetries between incumbents and newcomers, which make it harder for newcomers to challenge. Some measure of the DMA should be understood with this lens ; access to data, portability, interoperability. These rules are driven by the idea that we want to have Schumpeterian competition still in place. It is not really a question of whether it there or not, but rather what do agencies do in order to enable such competition to occur and be relevant in the future.

Do you believe a new definition of market power needs to be addressed in the context of digital markets, by opposition to physical markets ?

I think we should take a more holistic approach to this, which I don't think it is necessarily just a feature of digital. But in the digital it is prominent because, as we see interdependencies, which make it much harder to think about market power and how to find a good measure of it. If we think of market power, we need to understand the overall business rationale of a particular digital player to see how the interaction and management of its very diverse ecosystem, and how that contributes to the strength of this and also be able to make sure to take into account what is interconnected.

#### **Appendix 4 : Record of the interview with Estelle Dierckx [29<sup>st</sup> April 2022 / 10am-11am]**

During my interview with Estelle, I was able to make great connection not only between killer acquisitions taking place in the pharmaceutical sector and in the digital one, but I also was able to get insights from the sector more broadly speaking. She provided me with valuable information especially towards the innovation side of a company operating in this industry.

She started by introducing herself : “I’ve been at UCB for 6 years, and I’m in charge of head commercial and of all IT projects for the commercial team ; websites, app, reports, analytic projects, AI, and we support all activities of interactions with the doctors”.

I followed by explaining quickly the topic of my research thesis in few words, and thereafter you can provide me with comments or links that you can make with what you. I did not want to ask specific questions but rather let her make links where she seemed to be able to. So concretely I told her that I analyze the digital markets and more particularly the digital platforms that pose competition problems - GAFAM. The direction I'm taking is to try to understand how a regulation designed to deal with competition could have an effect on innovation, both for large companies and for start-ups. I will start by making a comparison with other times natural monopolies like the telecom sector, and see what parts of this regulation can be inspired. Then I make a more precise analysis of the DMA, which is the framework that has just been voted at the European level to regulate all this, and I try to make a pro and con of pro-competitive and anti-innovative rules. And then lastly, I look more at mergers and acquisitions, which is generally a topic that comes up quite often in the competition/innovation debate. And in this context, I make a link with the pharmaceutical sector, which sees a lot of these small generic companies being swallowed up by the big firms. The reasoning behind this is that generics will be sold cheaper, and therefore represent a threat in terms of competition for the existing firms. In the digital sector, it seems that GAFAMs are buying up innovative SMEs, in order to kill the competition, and at the same time to stop the development of their innovations, which represents a serious impediment to innovation.

The first insight that she shared with me is that first of all, the pharmaceutical sector is the most regulated sector. Even from a digital point of view it's very difficult to innovate. Looking at GxP, everything has to be super documented, tested, because you are taking on the risk of a patient's life. We have to be sure that all the tools are screened. From an innovation point of view it's true that pharma is not the most innovative sector, in digital terms at least. And even

in terms of products, it's so regulated that the innovation process is undermined. From the point of view of small start-ups, the life cycle of products in the pharma industry is a little bit different from the others; it's because the way these work is that you usually have to find molecules, or something that will allow you to find a drug. And between the time of finding the molecule and the time you market your product, it takes about 10 years. Also, between 10.000 researches, there is only one that works. So the investment in research is huge, to find new scientific ideas. And so there are many companies that invest in research that are sponsored by Big Pharma, but all these small companies that do research are not equipped to market their product, in the sense that if you want it to work, to pay back the costs of 15 years of research, you need to have the means and the possibility to have the teams that will visit the rheumatologists, cancerologists, dermatologists, etc.. This means that you need a very large workforce. So I think the main reason why companies focus on research and then if something works well they get swallowed up by the big guys, is also because they don't have the ability to commercialize at the same speed. And the big pharma companies already have the relations with the doctors.

She continued by providing me with an example. They have just acquired a small company, and they have 2000 people in the field in Europe and international market. 2000 people is a lot, and before a company can have that many for a small component, it takes time, and they don't have patients either... Them, as a big company already have the connection to the field, we already have the doctors, and it's much easier to add just one more drug, than to form everything from scratch.

I therefore tried to make a link saying that it's a bit the same situation that happens in the digital world with the creative and innovative SMEs. While in the pharmaceutical industry is the access to doctors, workforce, customers and means, in the digital industry it is the access to users thanks to the network effect that makes it work. And so the problem is that mergers and acquisitions are necessary to give life to small innovations, but the problem is that by doing this there is no possibility to create competition at the level above. And this is why Europe has concerns about the monopolistic positions of the big tech companies, which are difficult to disrupt.

Estelle agreed with the fact that big companies in the pharma sector sometimes buy out the competitors.

To continue with, I brought on the difficulty in these sectors, in the context of analyzing M&A, to understand which products are substitutes and which are complements. In any case, in the digital market this is the problem in the analysis of acquisitions. Because it is by defining the status that we understand who they could become potential competitors or not. I asked her opinion on it.

Her view on that is that big companies, when they acquire smaller firms are looking at whether or not the product in question appears in a market in which they have access. And if we have access to the market, it means that we have the workforce that has the connection, so it's win-win and if in addition to that they are complementary products with yours, it's even better. She also made a link with her company which focuses on epilepsy type diseases. And these patients tend to combine or switch drugs, so in this case it's interesting if the drugs are combinable. Globally, she seemed to be concluding that the main thing is the access to the market.

I wanted to finish the interview by asking her whether or not she thought that, at the European level, the fact that the norms are so regulated is what prevents innovation to flourish in terms of incentives and means. Ans to that, she answered that for what is concerned with the digitalization procedure, looking at "GxP", we see that the pharma processes are very regulated and that it blocks innovation. Companies are not equipped for this kind of thing. With regards to their digital systems, they have to make huge documentations for small things, so much so that they have to make sure that everything is really done in the right way and that no risk for the patient is taken. That's good practice. Everything takes time. She concluded arguing that it takes time to innovate. And in order to be able to innovate, one has to be agile. So these regulations and the super complicated processes don't allow much flexibility on the part of the companies. Innovation is linked to agility and flexibility, and in some sectors, this is not necessarily the case.

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