THE INFLUENCE OF DIGITAL MARKET ACT ON ONLINE PLATFORMS' COMPETITION

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Abstract

In the past decades, the EU has been trying to improve its digital policy to regulate the digital economy better. Currently, the two main aims are: fostering innovation and promote fair competition. However, achieving the latter goal might lead to overprotection and harm innovation. Therefore, this research focuses on the newly proposed Digital Market Act (DMA) and analyzes its influence on the online platforms' competition. Moreover, the DMA's influence on innovation is supplementary to this research.

In achieving the goals, the analysis is divided into two parts: Economic and Legal. For the economic analysis, it took a deductive and strategic approach and used literature review as the method to acknowledge the classical economic theories and apply them in discussing a specific case: *Facebook, Inc.* for observing the economic facts and laying a foundation to the legal analysis. The legal analysis can benefit by analyzing the previous competition law practice within the EU. Furthermore, the analysis of the DMA is focused on the concept of 'gatekeeper' and its obligations.

This paper found that the online platforms are competing on the data and for the market share. They want to acquire more data and have full control of it. Accordingly, their innovations are conducted in expanding themselves to maintain their market position and prevent disruptors. The DMA specifically targets the very large platforms and imposes ex-ante rules to prevent anti-competitive behaviors. By forcing the 'gatekeeper' to have more transparency to the advertisers and to share more data with its business users.

Thus, the DMA can shape a more contestable and fair digital market through disintermediation and remove data-driven entry barriers in order to make business users more independent, and promote competition. Additionally, it creates competitive pressure to incentivize innovation.

List of abbreviations

Abbreviation	Explanation
CPS	Core platform services
DMA	Digital Market Act
DSA	Digital Service Act
DSM	Digital Single Market
EU	The European Union
ECD	E-commerce directive
GDPR	General Data Protection Regulation
IP	Intellectual property
ISS	Information society service
ISS	Information society service
R&D	Research and development
TFEU	Treaty of the Functioning of the European Union

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1. Introduction

1.1 Regulating online platforms in the EU

Online platforms are playing an ever-increasing role in modern society. While they create more value to the digital economy and make our life better, they also bring more challenges and risks, making themselves desirable targets for regulatory intervention. Over the years, European policymakers are actively developing better policies to create a healthy and orderly environment for online platforms to compete and boost the development of the digital economy.

There are two main guidelines for European policymaking related to online platforms, and the primary one is fostering innovation. To be more specific, the EU wants platforms to be the powerhouse in the digital economy by *"not weight them down with unnecessary rules"*[1]. Having a historical perspective on the EU internet policy, this policy choice can be dated to the mid-1990s. At that time, the European digital policies adopted a laissez-faire approach which aims to give more flexibility to digital business entrepreneurs. Online platforms as the research focus, whether they are search engines such as Google, social network platforms like Facebook or others, are running various business models. These corporates keep developing new business ideas and creating more value. Therefore, from the regulatory perspective, instead of having some restrictive regulations that might stifle new business opportunities, the policymakers would like to regulate the digital economy in a liberal way to avoid astricting the corporates' creativity.

In 2015, the European Commission introduced *'level playing field'*[2] as one of the new policy guidelines in key EU internet law initiatives, which claimed that platforms need to act responsibly towards users and create the right conditions to support innovation, investment and fair competition. In addition, regulation on very large platforms is one of the most prominently debated issues in digital policymaking. Although the idea that large platforms need to be regulated separately can be dated back to 2015, it was first gained ground in 2020, the European Commission presented a digital services act package[3], with two draft pieces of legislation: Digital Service Act (DSA) and Digital

[1] Vice President Ansip, EU Commission Press Release, 25 May 2016, https://ec.europa.eu/commission/presscorner/detail/en/MEX_16_1909, accessed 07.06.2021.
[2] European Commission, A Digital Single Market Strategy for Europe, Brussels, 6.5.2015 COM(2015) 192 final.
[3] European Commission Press Release, 15 December 2020, https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2347, accessed 08.06.2021.

Market Act (DMA). These two acts are designed to make online platforms more accountable for their content and create a fairer playing field. There are mainly two reasons which drive the development and split of these two regimes. First, the current EU rules on digital services have remained largely unchanged since the adoption of the e-Commerce Directive[4] in 2000. Thus, it calls for a more up to date version. Secondly, the present competition law's ability to address the digital economies' competition issues has been doubted. While DSA is a horizontal initiative focusing on issues, such as liability of online intermediaries for third party content, the DMA is specifically targeting to large platforms and the competition issues[5].

However, the *'level playing field'* has been criticized and questioned, especially regarding the discussion of online platforms. There is a certain clash between the two main policy choices. Which makes it difficult to balance both policy goals at the same time, since the second policy goal introduces the danger of specific sectors being over-protected which might negatively affect innovation[6]. Moreover, for the large platforms, the new rules will enshrine within EU law with a set of ex-ante rules that will radically change how large platforms can operate in the EU, if the DMA is adopted. Nevertheless, it would be a new attempt for it has not been effectively tested.

Hence, one question can be raised: *Can EU regulate online platforms' competition without stifling innovation?* Although the answer seems binary, to provide a comprehensive answer to this question, it needs to consider questions such as *how does EU regulate the online platforms' competition*; *what kinds of innovation online platforms are conducting*; *why regulating platforms' competition issues might influence innovation*. Therefore, for organizing the research more practically, this paper seeks to analyze the potential influence of the newly proposed DMA on online platforms' competition and carries out a case study on large technology company: *Facebook, Inc.* Moreover, to have some insights and answer the question, this research is conducted in two parts: Economic analysis and Legal analysis, thus, the goal is to answer the following sub-questions:

Economic sub-question:

How does Facebook compete and innovate?

[4] Directive 2000/31/EC.
[5] The DMA proposal is concerned with economic imbalances, unfair business practices by gatekeepers and their negative consequences.
[6] IBID, p.4

Legal sub-question:

How does DMA influence online platforms' competition?

Since these two parts are closely linked and interacted, the first part of the results can partially answer the second sub-question from a micro-level. And the **main research question** is the same as the legal sub-question.

1.2 Digital Markets Act (DMA)

The EU competition authorities have started to closely scrutinize the very large platforms whose market behaviors can jeopardize the competitiveness of the digital markets. In December 2020, the European Commission published a proposal for a regulation on contestable and fair markets in the digital sector, known as the Digital Market Act. It works as a complement of the existing competition rules, strengthen control over large digital platforms that 'serve as an important gateway for business users to reach end users', and is so-called ***"gatekeepers"***. This approach allows a shift from ex-post competition intervention to **ex-ante regulation**. The new competition tool can regulate the markets and impose behavioral or structural remedies[7], even if there is no alleged breach of the existing EU competition rules[8].

"Gatekeepers" are the subject to the DMA. The very large platforms have significant impacts on the EU internal market and serve as an important gateway for business users to reach their customers. These companies provide at least one ***"core platform service"***[9] and have a lasting, large user base in multiple nations within the EU. There are **three cumulative criteria**[10]in defining the "gatekeepers" and based on these criteria, whether the platform is a gatekeeper can not only be assessed **quantitively** by the company size and turnover, but also **qualitatively** due to its relative importance.

After being identified as a gatekeeper, it will carry an extra responsibility by complying with **specific obligations and prohibitions** laid down in the draft legislation to conduct themselves in a way that ensures market contestability. To be more specific, after the company is identified as a gatekeeper, it

[7] See Art. 16 of DMA.
[8] Refers Article 101 or 102 TFEU.
[9] Including 8 types of CPS: (a)online intermediaries; (b)search engines; (c)social networks; (d)video sharing; (e)number-independent messaging; (f)operating systems; (g) cloud services; and (h) advertising services.
[10] See Art.3 of DMA: Designation of gatekeepers and it will be analyzed in the legal analysis section 5.3.

will have to comply with the *"do's"* and *"don'ts"*[11] listed in the DMA. The *"do's"* and *"don'ts"* are defined in the light of the previous antitrust practice in the EU and it spells out two distinct sets of requirements[12]. However, the emerging gatekeepers[13] would only be subject to a limited set of necessary and appropriate obligations to ensure that the company does not achieve such an entrenched and durable position in its operations[14] by unfair means.

The **Commission would be the competent regulatory body to implement** and it would be assisted with its decisions by the digital markets advisory committee, composed of representatives of the member states. For instance, member states may always request the Commission to open a **market investigation** for the purpose of designating a new gatekeeper. While implementing the DMA, the possibility of sanction for non-compliance with the prohibitions and obligations is foreseen. If a gatekeeper does not comply with rules, the Commission can adopt interim measures, impose and accept binding commitments upon and from gatekeepers, and impose **fines** of up to 10% of the company's total worldwide annual turnover and periodic penalty payments of up to 5% of the average daily turnover[15]. Moreover, in case of systematic non-compliance[16], **additional remedies** can be imposed after the market investigations, including more stringent behavioral and structural remedies, such as divestiture of a business, or parts of it[17].

1.3 Case introduction: Facebook, Inc.

There are three parts of information consist this introduction: Brief introduction of the case company's history and products or services; its operation within the EU; and its business plan.

Facebook was established in 2003 and it initially is a social media specifically targeted at university **social networking**. It is a pure digital company whose business model involves collecting and monetizing user data, which will late be aggregated, refined, and sold to third parties in order to facilitate the precise **targeting of advertisements at users**[18]. Facebook has various products[19] and

[11] Once companies are identified as gatekeepers, they would need to implement a range of obligations and prohibitions.
[12] Data-related provisions are centralized in Art. 5 and Art.6 of DMA.
[13] Refers these gatekeepers who have not yet enjoyed an entrenched and durable position but will do so in the foreseeable future.
[14] See Art. 15(4) of DMA.
[15] See Art. 22 to 29 of DMA.
[16] Fulfill: a) three non-compliance decisions within five years, and b) the strengthening or extension of the gatekeeper position.
[17] For instance: selling units, assets, intellectual property rights or brands. See Art. 16 of DMA.
[18] See A. Jones, B. Sufrin, N. Dunne, "EU Competition Law: Text, Cases, and Materials", 7. ed. Oxford University Press, 2019, p.58.
[19] Facebook's products and services, https://www.facebook.com/help/1561485474074139/?helpref=uf_share, accessed on 08.06.2021.

Subsidiaries, such as photo-sharing app *Instagram* and the messaging service *WhatsApp*, these products or apps allow their users to connect with friends and family as well as make new connections. Facebook's total revenue increased from $5 billion (in 2012) to over $85 billion (in 2020) and it generates most of its revenues from ad sales[20]. Taking a broader and global perspective, Facebook is not only competing with other social networking platforms, such as LinkedIn, it is also competing with Google in advertising, Amazon with marketplace, and other types online platforms are also its competitors[21] in a certain way.

Facebook has three data centers[22] and twenty offices[23] in Europe. Its monthly active users in Europe have grown by 61 percent between the fourth quarter of 2012 and the second quarter of 2021[24] and 2018 was the only year in which the company experienced minor setbacks, due to the Cambridge Analytics scandal[25] about the data breach. Globally, Facebook has been involved in several investigations or cases about **different areas of issue**s[26]. At this moment, the EU is especially addressing its concerns on the **data-related issues**, such as data privacy and data usages, and Facebook even said: " *it might stop operating in Europe*"[27]. In additional, the EU has accelerating the speed in developing policies to regulate the digital economy.

Facebook is planning to pivot the social network towards a **mega-app**. It wants to be WeChat[28], a Chinese app that combines **multi-purposes in one app**, including messaging, social media, and mobile payment. Even though these two apps have several key differences, the ultimate goals kook similar: singular and all-purpose networks that can be leveraged to serve users for a large range of products and services. There are several challenges in hindering Facebook in building the mega-app. For instance, WeChat can build the payment because it mainly targets the local customers while

[20] $84 billion out of $85 billion in 2020. See Facebook's financial report, 2020. https://investor.fb.com/investor-news/press-release-details/2021/Facebook-Reports-Fourth-Quarter-and-Full-Year-2020-Results/default.aspx, accessed 08.06.2021

[21] See Facebook's competitors,https://craft.co/facebook/competitors, accessed 08.06.2021.

[22] Located in Ireland, Sweden and Denmark. https://www.facebook.com/careers/v2/locations/?job_region=Europe%20%26%20Middle%20East, accessed 08.06.2021.

[23] IBID.

[24] Facebook active monthly active user, https://www.statista.com/statistics/745400/facebook-europe-mau-by-quarter/, accessed 08.06.2021.

[25] In 2016, Political consulting firm Cambridge Analytica mined users' data from Facebook and used it to crafted individual messages to voters identified as perusable to vote Leave in the Referendum.

[26] In related to digital taxation, data privacy issues, etc.

[27] Facebook's news regarding the issue: https://www.businessinsider.com/facebook-eu-us-data-transfer-could-block-service-2020-9?r=US&IR=T, accessed 08.06.2021.

[28] See news: https://www.theverge.com/2019/3/8/18256226/facebook-wechat-messaging-zuckerberg-strategy, accessed 08.06.2021.

Facebook's businesses are worldwide. Therefore, it would be hard for them to cooperate with various nations, especially since more and more nations are concerned about data privacy or security. However, there is no doubt that Facebook intends to conduct the **integration** as much as possible[29]. Facebook could extend into users' daily lives for entertainment, news, and commerce by building the mega-app. In other words, it would keep its **users to be active** and continually **expand its user base**.

1.4 Disposition

This research aims to analyze the DMA's influence on online platforms' competition. Moreover, the basic and primary information for the research subjects has been provided. Moving from conceptualization to operationalization, the methodology section explains the design and structure of this research. The literature on the unit of the analysis, online platforms, will be reviewed to provide some insights into the research and narrow the research focus. To answer the research questions, the analysis consists of three parts.

Chapter 4 Economic analysis seeks to analyze the online platforms' competition and innovation situations. It takes a deductive and strategic approach to analyze a specific case: Facebook, Inc. Acknowledging the classical economic theories, this research will critically review these theories and apply Porter's five forces as a strategic tool for creating a theoretical framework in analyzing the case company. During the analyzing process, Facebook is considered as a whole, and its products or services will only be mentioned or used as empirical data in supporting the opinions. In addition, although the economic sub-research question regarding Facebook's competition and innovation, the sub-question is used to serve the main research question. Therefore, the discussion put more attention on competition issues. Moreover, the analysis results will be discussed at a broader level to reflect the general competition situation for the online platforms.

Chapter 5 Legal analysis seeks to have an in-depth understanding of the DMA, especially on Art.3 about the 'gatekeeper' designation, and Art. 5 and Art.6 regarding obligations and prohibitions. However, its novelty results in a limited resource that can be reviewed or analyzed. Since DMA is designed based on the observations of the economic facts and previous antitrust practice, this research

[29] For instance they bought Instagram in 2012 and WhatsApp in 2014, and Facebook want to merge and transfer the data between these apps.

will take a competition law approach in selecting and explaining relevant principles. It is worth pointing out, the research focus on the EU competition law, and national cases will only be mentioned if relative to the discussion. Additionally, during the analyzing process on the DMA, the research will interact with previous economic observations on online platforms, and other EU legislation might be mentioned in the relevant discussion. In order to have a comprehensive understanding of the DMA, it will also mention several global perspectives and different stakeholders, such as economists and policymakers, their opinions will only be considered to complement the analysis.

Chapter 6 Integrated analysis will answer the two sub-questions first and then combine two parts of analysis in discussing DMA's influence on online platforms' competition and innovation.

2. Methodology

The paper aims to analyze the DMA and its influence on online platforms' competition. The **natural limitation** of this research lies in the DMA's novelty. As it is a newly proposed act where have limited academic or legal resources to be reviewed. Nevertheless, the DMA is proposed based on the **economic facts** of the digital economy and **previous antitrust policy practice**, and this paper can benefit from reviewing relevant economic theories and EU competition law or cases. Additionally, the field of this research has a strong interdisciplinary character, which is influenced by economic and legal considerations alike. Thus, this paper will break the research question into **two sub-questions** and separate the analysis into two parts, namely, **economic analysis and legal analysis**, to address different focuses in each part. However, the lines between the disciplines has been naturally integrated, this paper will bring these two parts' main results and integrated them in answering the research question.

Besides **literature review** has been applied as the main research method. In the literature review section, this paper uses the integrative review approach[30] in combining different sources of articles to characterize the research objects: Online platforms, and provide an overview of the competition issues of the online platform. By conducting such kind of review, it provides insights to help the research to narrow down the topic and have a more specific focus. For this paper, the literature review

[30] See H. Snyder, " Literature review as a research methodology: An overview and guidelines", Journal of business research 104, 2019, p.333–339.

is designed for reflecting the following questions: (i) What is the definition of online platforms? (ii) What are their economic features? (iii) What are their problems that need to be regulated, and why? Additionally, in order to answer the research question, the focus of the literature will emphasize on competition-related issues and large online platforms.

2.1 Economic analysis

The economic analysis will build the economic foundation for contributing to the researching process of the DMA, it can help the author to understand why the DMA is proposed and how the objectives within DMA are designed. Moreover, it carries a case study of the large social networking service provider *Facebook, Inc*, and taking it as a representative in reflecting how large online platforms compete and innovate.

2.1.1 Economic theories

The methodological approach to this part of the study is **deductive**. Since the research topic is a newly emerging topic, by taking such an approach, it aims to build relevant theoretical frameworks and hypotheses based on the review of the old models. It requires **three steps** to achieve the goal. First, existing and classic economic theories related to the research objects, including competition, innovation, and the relationship between these two concepts, will be revied. An **integrative review** can help the author to evaluate these economic theories and the empirical evidence in a certain area and examine the validity of the classic economic theories by debating different views on the existing theories [31]. Secondly, it will **critically revisit** these theories and combine them with certain observations on the platform economy to argue how these theories can apply to the online platform economy. Lastly, it will build a **new theoretical framework** based on the assessment of these economic theories and having the emerging perspectives on this research topic to **make relevant hypotheses**.

2.1.2 Strategic approach

In order to move into the legal analysis, this paper will apply a strategic tool which can connect the

[31] See D. Tranfield, D.Denyer & P. Smart, P. "Towards a methodology for developing evidence-informed management knowledge by means of systematic review", British Journal of Management, 2003 (14), 207–222.

economic framework with the legal assessment. One of the **sources of the inspiration** for competition law[32]is the concept of 'competitive advantage' in the strategy analysis. Strategy analysis focuses on competition, taking into account the corporate strategy to maximize a firm's performance. The most widely used competition framework in business strategy is the '**five forces of competition framework**' put forward by Michael Porter[33] which is useful in describing where the organizational power lies in a competitive situation. This research will conduct a **case study** using Porter's five forces as a tool and apply the theoretical framework, which is developed based on the previously assessed economic theories, to have a specific and **empirical observation** on the online platforms' competition. Having such an approach, it enables the author to analyze the online platforms' competition from a **micro-level** and hopefully gain more insights. As a result, this section will conclude the case company's competitive position and discuss its business strategies. Moreover, the developed hypotheses will be **verified or falsified** according to the empirical assessment of the case company.

However, there are **two limitations** of this design. One lies in the tool that has been applied, where Porter's five forces cannot be used in predicting the industry's future trend. The other limitation is that such analysis results will only show the observations from the firm level, but one of the aims of this paper is to reflect certain general problems for online platforms. In order to ease these two limitations, this paper will consider the case company's relevant position within the industry and combining the previous literature reviews on the online platforms, and use these results to discuss the online platforms' competition within the macro-level.

2.2 Legal analysis

As the natural limitation of the legal analysis is the novelty of the DMA, only few limited legal recourses to be reviewed. This paper will analyze the legislation which closely related to the research topic, namely, antitrust policies. Moreover, even the research focus on the EU level, it will try to bring different perspectives[34] view in the legal researching process.

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[32] I. Lianos & V. Korah, "The economics of competition law", Competition Law, Analysis, Cases, Materials, 2019, Oxford University Press, p.200.
[33] See M. Porter, ' The Five Competitive Forces that Shape Strategy', January 2008, Harvard Business Rev 25.
[34] Including global perspectives, academic or policy makers view on the DMA.

2.2.1 The EU competition law approach

Since the DMA is a new draft proposal, there are limited legal resources or previous cases to be analyzed. Nevertheless, the DMA is a complementary to the EU competition law, which follows several basic principles of competition law, and would be beneficial to this paper when acknowledging the previous cases or analyzing certain perspectives from the EU competition law. This research will not take a systematic approach to the competition. Instead, it will only critically review the main principles within the antitrust policies in order to point out how the online platform economy has **challenged the basic principles**. The attention will be laid on the EU competition law, namely, Art. 101 and 102 TFEU, but relevant legislation[35] or cases will be discussed if relevant. In this regard, guidance will be taken from judgments of the Courts[36] and other opinions or reports.

2.2.2 Interpretation challenges

This research focuses on the DMA, especially on the designation of gatekeeper and its obligations and prohibitions. Due to the novelty of the DMA, rather than focus on its enforcement, this research will lay the emphasis on discussing its design and providing explanations of why specific objectives are designed; what are the problems that the DMA is trying to address and why; what are the toolkits have been selected in implementing these rules and why. The application of the described legal sources requires the correct use of the interpretative methods. This paper will mainly apply the systematic and literal interpretation to interpret the terms within the general scheme of the legislative system in understating the context and give the contemporary meaning to the original text.

Moreover, there are limited legal resources and previous cases to be analyzed. For the purpose of lowering this limitation and making the interpretation more supportive and reliable, this research will try to include different views on the DMA proposal by conducting the document analysis and using different sources of secondary data, such as reports, to combine multiple stakeholders' [37] opinions on the DMA.

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[35] For instance, GDPR. And other secondary law.

[36] The notion 'the courts' accounts for the CJEU and national courts. Decisions from national courts will be subject to discussion in so far as they can be inspirational for regulation at EU level.

[37] Including academics, policymakers and global perspectives, etc.

3. Literature review on online platforms

The unit of analysis within this research is the online platforms, although it is considered to be a newly developing concept, there are increasing numbers of economists or policymakers are conducting analysis on online platforms since platforms are playing a crucial role in modern life. In this section, starting from the economic perspective, the definition and some features of online platforms will be presented. Moreover, this section will discuss the problems of the large online platforms, including their business models and regulatory challenges they have bought to the policymakers. Secondly, from the legal perspective, the legislation and regulations vary from the types of online platforms. This paper only reviews the regulations on online platforms in a general way by pointing out the EU framework legislation on online platforms that apply to most online platforms, instead of introducing specific laws.

3.1 Definition of online platforms

Even though the term of online platforms (or digital platforms) has been widely used in public discourse, it is difficult to provide a consensus definition of online platforms, since the business model of online platforms vary from each other, this paper reviews several definitions of online platforms that made by different authorities for the purpose of finding some common and typical features in characterizing online platforms.

From an economic perspective, there are some important characteristics of online platforms which can be summarized, including the use of information and communication technologies to facilitate interactions between different users, collection and use of data about these **interactions**[38]. Economic literatures have given more prominent attention to platforms that constitute a **two-sided or multi-sided** market. A multi-sided platform enables two or more sides to interact, meaning that those sides "retain control over the key terms of the interaction"[39]. In other words, multi-sided business models enable the platforms to act as the important access points among multiple actors, for instance between suppliers, including services and content providers or third-party sellers, and consumers.

[38] Defined by OECD in 2019.

[39] See A. Hagiu & J. Wright, "Multi-Sided Platforms", 2015, International journal of industrial organization, p.163.

In 2016 Joint Research Centre's technical report on the economics of platforms, platforms are defined as "two-sided" or " multi-sided" markets where " *two or more types of users are brought together (...) to facilitate an exchange or a transaction*". This quoted definition is the closest to the operational definition which has been adopted by the European Commission, where the platforms are defined as "*an undertaking operating in two (or multi)-sided markets, which uses the Internet to enable interactions between two or more distinct but interdependent groups of users so as to generate value for at least one of the groups.*" One of the critics on current existing definitions is about the "two-sided" or "multi-sided", where some of the scholars argue that there are no obvious reasons for explaining why platforms must be two-sided or multi-sided. For instance, it can target only one group and facilitate its transaction and communication such as gamers' chat forums.

It should be noted that from the legal practice, there is a **lack of clear definition** of online platforms in EU legislation. Taking a historical approach and from the legal perspective, the term of *platforms* firstly appeared in 2015 Digital Single Market Strategy[40], however, there does not exist any text in the EU or national laws which cover the subject and it does not name individual directives that ought to be subjected to revision. Currently, there is no clear definition of online platforms in EU hard-law, therefore, platforms are not directly regulated under the name of 'platforms'. Nevertheless, the closest concept to 'online platforms' which can be identified in EU internet policies is 'online intermediaries'. There are none significant evidence appeal that the new **EU policies have tried to shift from intermediaries to platforms**. However, the Commission did not explain these two concepts' position clearly yet, and these two concepts are interchangeable in a certain degree if we reviewing the relevant documents.[41]

Overall, concluding from the economic literature and European Commission's definition, this paper defines platforms as multi-sided markets that bring different types of users together to facilitate transactions or enable interaction among them. Moreover, this paper can benefit from reviewing the general regulations that applied to the online intermediaries[42], since there is a lack of existing legislation that specifically targets online platforms and it is sensible to view them jointly at least until

[40] In DSM section 3.3.1 appeals that platforms are playing important role in modern society.
[41] See A. Savin, "Regulating Internet Platforms in the EU The Emergence of the 'Level playing Field'", 2018.
[42] Who provide information society services (ISS).

a clearer explanation has been made.

3.2 Features of online platforms

Platforms are digital infrastructures that connect two or more groups and enable them to interact. In contrast to the traditional linear business model[43], platforms are running **multi-sided business models** and bringing different actors together to interact socially or to engage in a whole host of commercial transactions, including bartering and trading services.

The platforms can either be transaction or non-transaction markets[44]. In a transaction market, platforms bring together users from each side and enables them to enter into transactions with each other. Amazon Marketplace, which connects buyers and sellers, is an example of this type of platforms. While in a non-transaction market, there is not any observable transactions between the sides, even though an interaction between them is present. For instance, on Facebook, the users on one side interact between themselves but there is no direct transaction between them and on the other side, there are third parties such as advertisers are making use of their data.

The basis of much of the digital economy is **data**. The mass of data is produced in great volume and variety and at great velocity by every transaction, interaction, and social media exchange online, and continually fed by individuals and companies. Even though the platforms usually charge for free[45], data can be commercialized and it is **a currency** as well as raw material for the platforms. Platforms collect large number of information of their users and analyze these data by algorithm tools[46] to improve service to their users and attract third parties who want to achieve and use these data in targeting their consumers. Hence, the service providers are always data-hungry because the more a user is active on the platform, the more data they generate and the more valuable that data becomes, which also known as **network effect**[47]. Network effect can either be direct or indirect. Direct network effect occurs when a product becomes more valuable as the number of users grows. While indirect

[43] Produce goods or services then deliver to the customers.
[44] L.Filistrucchi., D. Geradin, E. van Damme, and P. Affeldt, 'Market definition in two-sided markets: Theory and practice. Journal of Competition Law & Economics', 2014, 10(2) J of Competition Law and Economics, p.293.
[45] Commissioner Vestager, "These incredibly powerful tools, like search engines and social media, are available for free. In many cases, that is because we as consumers have a new currency that we can use to pay for them: our data.", Speech 'Competition in a Big Data World', 17 January 2016
[46] Designed by increasingly sophisticated analytics tools including machine learning, AI, etc.
[47] Also known as network externalities which is a source of scale economies in consumption rather than production. Therefore it also refers as demand-side economies of scale.

network effect arises when there are at least two different customer groups and means that increased usage of one product increases the value of complementary ones or services which raise the value of the network[48].

To sum up, there are several common features for all online platforms, notably platforms' multi-sided nature and their intermediary roles; their ability to access and collect large amounts of data and data can be deemed as an essential asset; and exploit network effects[49] in enriching the company to gain more market powers.

3.3 Large online platforms

It is commonly said that the digital economy tends to monopolize because the network effect leads to "**winner-takes-all**". In addition, one of the major characteristics of platforms is **extreme and increasing returns to scale**[50], which means changes in productivity that result from a proportionate increase in input. For the platforms, hundreds and thousands of extra customers can be served with a tiny increase in the production costs. In short, the large platforms are far more efficient than the small ones. Thus, the market competition of online platforms is ***for*** the market rather than *on* the market. For platforms, once an undertaking is reaching the dominant position it is extremely hard to displace it in its core market unless there is the "gale of creative destruction"[51].

There are no incentives for the platforms to move away from their business models. They will be continuing to enlarge the market share and enhance their market power due to the **network effect**. Although the existence of network effects as such does not a priori indicate a competition problem, such effects may raise competition concerns in particular if they allow the merged entity to foreclose competitors and make it more difficult for competing providers to expand their customer base[52]. For instance, on one side, Facebook is free to users who create content for them and the more users they have, the better or quantity of data they can collect. On the other side, they can attract more advertisers

[48] M.L. Katz and C. Shapiro, "Network Externalities, Competition, and Compatibility", American Economic Review 1985, vol. 75, no. 3, p. 424-425.
[49] For instance, users are more likely to value and choose platforms with a large user base.
[50] See J. Crémer, Y. -A. de Montjoye, and H.Schweitzer, Report on Competition Policy for the Digital Era, European Commission, 4 April 2019, https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf, Chap.2.I.A, p.20 ff
[51] According to Schumpeter: "process of industrial mutation that continuously revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one". Thus, In short, it refers the whole market is disrupted and changed by the innovative products or services.
[52] The European Commission stated this in the Facebook's acquisition of WhatsApp. Case No COMP/M.7217 – Facebook/WhatsApp, 3 October 2014, par. 130.

to invest[53], which would be an endless circle. As every use of the platforms increases its value to certain users, they would apply different strategies to build market share in order to **obtain and utilize the data**. Accordingly, there are several subsequential problems generated by the network effect.

First, network effects can be an **entry barrier** for new tech companies, as the new firm may be looking at a significant period of losses because they have not accumulated enough users and gain the market power in competing with the existing firms. Large firms can **control the key channels of distribution** and being the significant player on a relevant market. Large tech firms usually limit or refuse third parties to **access the data** collected and stored by these large tech firms. These data may be needed by their rivals in order to compete with them or develop innovative products and services. Moreover, these dominant firms also use the data in helping themselves in innovating and identifying the potential competitors and they might buy up fledgling businesses before they become a threat, which is also known as *"**killer acquisitions**"*[54].

Secondly, large companies may apply multiple strategies to **lock in** the customers because the switching costs for the users might be high[55]. One on side, for users, they can impose identification services or they can conduct **self-preferencing practices** to attract the users. On the other side, for advertisers, they can promote **paid-dominance** which unfairly favoring certain products and services to the detriment of competing businesses, and they can also imposing **unfair terms** of access upon business users in order to promote bundling offer or prevent business users from directing their potential consumers to offer alternative services.

To sum up, the competition for platforms does not only take place within a product or technology market but also within a broader competition **ecosystem**[56]. And there is a very unequal distribution of market shares among those platforms, where large platforms tend to earn more market shares with different strategies which might stifle competition and preventing small firms or third-party from promoting their businesses by controlling their access to the data.

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[53] Since they have large active users which also means they have attractive and large number of data that the third-parties would like to have and utilize.
[54] Incumbent firms may acquire innovative targets solely to discontinue the target's innovation projects and preempt future competition.
[55] For instance, a user has a lot of friends who are only using Facebook, and if he/she wants to leave Facebook will also mean the losing all these connections, and it will be hard for he/she to build such kinds of network on other platforms.
[56] An ecosystem is a collection of products and services connected to each other and accessible only from products and services within the same system. See Report on Competition Policy for the Digital Era, European Commission, 4 April 2019, Chap.2.II.A, p.34

3.4 General regulations on online platforms

In this section, instead of reviewing specific legislation that addresses certain problems, the regulations applied on online platforms will be reviewed in a general way. As mentioned before, platforms are not directly regulated under that name. They are subject to multiple areas of **general legislation**[57], which not only apply to the digital economy but also applicable to other industries. Furthermore, platforms need to comply with the **other regulations** applied for their own industry depending on the platforms types[58].

Moreover, the EU is regulating the digital economy with a combination of **framework directives and sector-specific regulations**. The most basic framework directive is the Electronic Commerce Directive (ECD)[59] which covers a large area of digital services and regulating the digital economy in a general way. While under the framework directives, there are numbers of sector-specific rules that apply only to one aspect of the digital world and cover much narrow areas.

In the EU, there is a shift from regulating 'ISS' to 'platforms'. The policymakers try to harmonize several aspects of existing laws to create more sector-specific legislation for platforms. Nevertheless, for now, most of them are soft laws[60], and only **two acts** have been proposed: the DSA and DMA. The DSA largely maintains a traditional approach to digital regulations and keeps the most substantive rules, but it adds a strong and effective mechanism for monitoring illegalities. Although the DSA is primarily regulating the problems related to digital content, they are also competition-related issues. Because the problems of online platforms can be concluded and summarized into two groups: **problems relating to digital business model**[61] and **discrimination problems**[62] and problems generated by the digital business model can significantly influence platforms' competition[63].

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[57] Such as competition law, consumer protection law, intellectual property law, etc.

[58] For example, even Uber argued they are providing electronic service and they only need to comply with ECD, AG Szpunar suggests that Uber is a transport service and not just an electronic service, and thus, they also need to comply with the regulations for transportation industry. See Case C-434/15,https://curia.europa.eu/juris/document/document.jsf?text=&docid=190593&pageIndex=0&doclang=en&mode=lst&dir=&occ=first&part=1&cid=9124245.

[59] Directive 2000/31, OJ L178/1, 17.7.2000.

[60] Such as working paper, recommendations, etc. More specific examples are: Communication on Online platforms 2016;Communication and Recommendation on Illegal Content Online 2017 and 2018; Communication on Online Disinformation 2018.

[61] Problems related to the digital content and use of the data, and these problems are generated because companies take strategic approach in considering to gain more data legally. To be more specific, it includes problems such as: contracting; dominance; moderate speech; data-based business models abuse; IP-rights protection; cybersecurity.

[62] One player is treated less well than another player. Issues include: Paid dominance; App store rankings; Ad-blocking; Own-product promotion.

[63] For example, based on current legislation, intermediaries should not themselves be liable for material posted by third parties and thus, they do not need to actively monitor the content or remove the illegal contents, such as hate speech. However, if the DSA applied, they need to take more responsibility and remove illegal content. And thus, it will influence their ability in attracting different groups of users and decreasing their abilities to

For DMA, it proposed a new separate ex-ante regime targeting very large platforms to address the competition issues. Therefore, in summary, the EU addresses two main issues of the platforms by imposing more **liabilities** for online platforms and specifically targeting at **large platforms**.

4. Economic analysis

4.1 Economic theories

4.1.1 Innovation

Starting from the definition, it is hard to provide an explicit definition of innovation since large numbers of recent academics have integrated innovation across multiple disciplines and the previous studies only dealt with partial aspects of innovation[64]. In 1934, Schumpeter added a definition of innovation as '*new combinations*' of new or existing knowledge, resources, equipment, and other factors[65]. One close concept to innovation is *invention*. According to Arrow, the term of invention can be interpreted broadly as the production of knowledge[66]. However, innovation is related to, but not the same as, invention. This paper follows Schumpeter's argument in suggesting that there is a difference between these two concepts. Innovation supposed to be viewed as a **specific social activity carried out within the economic sphere and with a commercial purpose**. To be more specific, innovation might involve the practical implementation of the invention to create **new value** for the economy or the society. This is one of the main reasons that stimulates the scholars towards focusing on the role of innovation for economic and social change and study 'innovation' in combination with several disciplines.

Product and Process innovation

In social study, the types of innovation vary from organizations' capabilities, strategies and resources. According to Schumpeter, "fundamental impulse that sets and keeps the capitalist engine in motion comes from *the new consumers' goods, the new methods of production or transportation, the new*

obtain data which also decreasing their competitive advantages.

[64] The concept of innovation need to be studies with other disciplines. See A. Baregheh, J. Rowley, and S. Sambrook. " Towards a multidisciplinary definition of innovation. Management Decision", 2009,47(8), pp.1323-1339.

[65] See J. Schumpeter, "The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle", Cambridge, Mass: Harvard University Press, 1934, p.65.

[66] See J. Arrow, "Economic welfare and the allocation of resources for invention. In The economics of communication and information", Princeton University Press, p.609.

markets, the new forms of industrial organization that capitalist enterprise create.[67]" Departing from Schumpeter's point, most of the scholars suggest that innovations can be new or improved products or processes. Therefore, there are two main types of innovation[68], namely, *Product innovation* and *Process innovation*, where the former indicates that innovation can consist of a **new** product or service being introduced or an established product being **upgraded or modified**, and the latter refers to the implementation of **new facilities, skills to produce or deliver** the service which usually results in a cost reduction.

In practice, the product and process innovation can **accompany each other[69]**. Comparing with the 'Product innovation' where physical products can be recognized, 'Process innovation' tend to be intangible and need to be identified. Literature has pointed out that the **primary stage of the process innovation is likely to appear in material ways with new products or technology**, however, the organizational learning process in creating these products cannot be neglected. From a developing perspective, these experiences can be deemed as the *'new ways of organizing business'*[70] which might have considerable economic and social impact in influencing the whole industry to **reform their way to view their business**. The literature also mapped out that innovation is not only about technology breakthroughs but also about **business model innovation**[71]. For instance, digitalization is one of the important goals that modern businesses are pursuing, where it started with the inventions of different types of **digital technologies** and it has increasingly become a **new business model or strategy** that large numbers of organizations are promoting or trying to use in order to reorganize their business.

For the platforms, the multi-sided nature allows them to **improve the traditional business model in connecting and intermediating, and create new business opportunities or markets**. The most representative models are the sharing economy, an innovative internet-based business model by

[67] See p.286 of J. Schumpeter "The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle".

[68] See S. Borrás, & C. Edquist, "Holistic innovation policy : theoretical foundations, policy problems, and instrument choices", 2019, Oxford University Press, p.17.

[69] Pointed out by J. Tirole in "The theory of industrial organization", 1988.

[70] Proposed by C. Edquist, in "Systems of Innovation: Perspectives and Challenges", Oxford Handbook of Innovation, Oxford University Press, 2006, pp. 181-208.

[71] See C. Christensen & E. Raynor, "The Innovator's Solution: Creating and Sustaining Successful Growth", Boston: Harvard Business School Press, 2003.

leveraging the internet in connecting the traditional industry and customers. For instance, the success of Airbnb does not rely much on the new technology but on identifying the customers' needs and creating the aggregator business model to connect local hosts and tourists and challenge the traditional hospitality industry. Therefore, innovation is supposed to be analyzed **as a process** that begins with new ideas and concludes with market introduction.

Disruptive innovation

In economic literature, *Drastic* and *Incremental innovations* are often used in classifying the types of innovation. On one hand, innovation can be drastic, in that they render the existing technology obsolete and on the other hand, some innovations are incremental by making gradual and continuous improvements on the existing products and services[72]. Therefore, these terms are mostly associated with the technological development of a product or process and thus, they focus on the extent of the innovation rather than on the market effects. While studying the process of innovation, ***Disruptive innovation*** **and** ***Sustaining innovation*** are on similar lines with the drastic and incremental innovation, but mainly used in the context of the digital economy and focus on describing **innovations' impact on the market**[73].

Disruptive innovation is a term coined by Clayton Christensen that refers the process whereby a **smaller company with fewer resources is able to successfully challenge established incumbent businesses**[74]. In contrast, sustaining innovation is the process of innovating to make existing products and services better for the existing customer base, either based on customer or market demands. Many researchers, writers, and consultants use "disruptive innovation" to describe any situation in which an industry is shaken up and previously successful incumbents stumble and the theory's core concepts have been widely misunderstood[75]. However, the theory of disruption was initially developed from explaining and analyzing **why leading companies fail** and thus, point out the **importance of disruptive innovation**.

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[72] See J. Ettlie, P. Bridges& D. Keefe, "Organization Strategy and Structural Differences for Radical Versus Incremental Innovation", Management Science, 1984, 30(6), p.683.

[73] See J. Bower & C. Christensen, "Disruptive Technologies: Catching the Wave", Harvard Business Review 73, no. 1, 1995, p. 43–53.

[74] Defined by C. Christensen in 1995 "The theory of disruptive innovation" and mentioned in "What Is Disruptive Innovation?", Harvard2015, accessed from https://hbr.org/2015/12/what-is-disruptive-innovation.

[75] IBID.

According to the **theory of disruptive innovation**[76], incumbents often focus on sustaining innovation by upgrading existing products and services to attract higher-paying consumers. However, they might ignore the regular customers who want simple, low-cost alternatives. **Entrants** that prove disruptive begin by successfully identifying those **overlooked segments**. They foresee customers' **future needs and target either a new segment or a small market segment** that might meet future demand. In comparison, **incumbents** tend to focus on sustaining innovation and fulfilling their **current customers' needs**. Therefore, they might neglect these entrants' competitiveness or do not respond vigorously. Entrants then continually try to lower the cost and enhance the quality. After a period of time, they can move upmarket, acquire incumbents' mainstream customers, and preserve the advantage that drove their early success, leading to the disruption. Hence, it is important for **large companies to view disruptive innovation as a process and understand its influence and importance**. Moreover, disruptive innovation and sustaining innovation do not necessarily need to be alternatives to one another but rather **complementary measures**.

There are two types of disruptive innovation: *Low-end* and *New-market disruption*.[77] *Low-end disruption* is a company uses a **low-cost business model to enter at the bottom of an existing market and claim a segment**. The reason why there is a niche segment is that there is no profitability incentive to fight for the bottom of the market, and thus, disruptive innovators can target those less-demanding customers who do not need the high level of performance offered by established firms. *New-market disruption* aims at **creating markets where none exists**, turning nonconsumers into consumers.

It is meaningful for a business while gaining acceptance in the low-end market, which in order to be disruptive in **long run**. For instance, Netflix initially provides mail-order movie rental business that targets low-end customers who only have interest in watching films. With the development of the streaming technology, it eventually has the ability to offer on-demand movies in a cost-efficient way and it has successfully moved up-market by attracted a large group of Blockbuster customers.

[76] IBID.
[77] IBID.

The other debatable example about disruptive innovation is Uber[78]. Because by definition of the low-end and new-market disruption, Uber does not originate in either. On the one hand, it is difficult to claim that Uber found a low-end opportunity because it launched in San Francisco, a well-served taxi market. On the other hand, Uber's customers were generally people already in the habit of hiring rides, and thus, it is not aimed at turning non-consumers into consumers. The strategy Uber has applied is sustaining innovation in providing better services for the existing customer base. However, Uber has viewing the business from the other perspective and created a **new business model** by building a position in the mainstream market first and subsequently appealing to historically overlooked segments. Therefore, it created a disruptive effect within the market, which also pointed out the **differences between the disruption theory and disruptive innovation**[79].

Three points can be concluded based on disruption theory and disruptive innovation. **First**, large firms need to understand and realize the importance of disruptive innovation since it can significantly affect the profitability of the industry by changing the market structure. This leads to the **second point**: Large companies should have a long-term and dynamic perspective in making business decisions. They need to invest in existing technologies or improve existing services to fulfill current customers' needs and conduct sustaining innovation. Nevertheless, they cannot neglect certain segment gaps within the market or do not consider consumers' future needs. Keep identifying the overlooked segments within the market and refine them, supposed to be part of their strategies to maintain competitiveness. **Lastly,** for firms who would like to create disruption, they should not only target at creating low-end or new-market disruption, the new business models which can connect different markets may also be a good idea in creating the disruption.

4.1.2 Innovation and Competition

The relationship between innovation and competition is the subject of a familiar controversy between Schumpeterian and Arrowian in economics. Joseph Schumpeter argues that **innovation are boosted by dominant firms in the market**, while Kenneth Arrow suggests **competition favors innovation**.

[78] Supportive information for this paragraph's arguments can be accessed from the article: "Disrupting regulation, Regulating Disruption: The Politics of Uber in the United States", R.b.Collier, V.B Dubal, and L. Christopher, Perspectives on politics 16, no. 4, 2018, p. 919–937.

[79] While thinking about the theory of disruptive innovation, a dynamic and strategic approach needs to be taken. And for the concept of disruptive innovation itself, is more about the timely and visible effect.

To better understand Schumpeter and Arrow's arguments, it is necessary to have a brief economic overview of the concept of perfect competition and monopoly which are the two extreme cases of competition. Connecting with other theories, this section describes these two terms from the following perspectives: *Market concentration*, *Entry and exit barriers*, *Product differentiation*, and *Information flow*. Perfect competition is an ideal type of market structure where there are large numbers of buyers and sellers and there are no barriers to enter or exit the market. Moreover, the firms provide homogeneous products and there is perfect information flow which means everyone is a price taker within the market. The agriculture industry can be considered as an example close to the perfect competition market. While in the monopoly, there is only one firm and many buyers and the entry barriers are very high. For instance, the telecom providers are a sort of natural monopoly since it requires high infrastructure costs in launching satellites, putting cables, and so on.

In between these two extreme cases, there are other types of market structures, for instance, **monopolistic competition**[80] and this would be an appropriate way in describing online platforms market competition. The cost to get into the industry is low, and there are large numbers of online platform service providers, which are similar to the perfect competitions features. However, these service providers provide slightly differentiated products or branded products that make them outstanding within the market.

Approaching the ideas of Schumpeterian, he proposes an important controversial assertion of midcentury economics: *monopoly is the market structure most conducive to innovation.* In other words, Schumpeter suggests there is an inverse relationship between competition and innovation. He points out the weakness of those traditional theories in viewing the perfect competition, which assumes there is a stationary equilibrium. Instead, he suggested that innovation is supposed to be viewed as a **dynamic process**, and we need to analyze economics within its **specific context and foresee its future**. The concept of *creative destruction*[81] has revealed the importance of disruptive innovation and then, he revisited the view of the relationship between innovation and competition.

[80] E.H. Chamberlin, "Theory of Monopolistic Competition a Reorientation of the Theory of Value", 8. ed. Cambridge, Mass, 1962.

[81] In simplest terms, refers to an ongoing cycle in which one developed technology is violently displaced by a superior technology and cause the innovation process of industrial mutation.

According to Schumpeter, certain restrictive strategies may help in the process of creative destruction. **First,** certain safeguarding activities need to be taken in promoting innovation. **Dominant firms** have a certain **knowledge** of the market, and they have **more experience** in operating within the market. Thus, they have the **ability to foresee** things such as the future market trend and make promising plans in reaching the goal. **Secondly**, all organizations need to innovate to sustain growth, market position, and competitiveness. Monopolists have **more resources** and freedom from competitive pressure to be able to undertake significant innovation, since the funds are provided within the organization, they are more likely to overcome the agency problems or challenges raised by information asymmetries, therefore, the investment can be processed more smoothly. **Lastly,** dominant firms **face the pressure of potential competitors** who might introduce improved products by adopting disruptive technology and replacing their market positions. Thus, due to the **fear of being replaced**, the monopolists would **actively promote R&D** in order to create the most advanced technologies in maintaining their competitive advantages.

In comparasion, Arrow argues that Schumpeter severely underestimated the impact of competitive pressure in inducing innovation, and he proposes that monopolists might innovate less than competitive firms because they have less to gain[82]. He explained that incentive to innovate has to be assessed by comparing the potential profits from an invention with the costs. In other words, **innovation incentives depend** not on post-innovation profits per se but on the **difference between post-innovation rents**.

Since the **monopolists** can gain profits even if they do not input investment, they are **less motivated than their innovating competitors**. Monopolists who heavily invest in existing technology will be reluctant to displace it, because investing in new technology is risky, and large firms would neutrally allocate their recourse to **favor their current profits**. This also means monopolists would accelerate their own replacement instead of investing in new business. The way in which monopoly profits reduce a monopolist's incentive to innovate, is referred as the 'replacement effect'[83]. In contrast, a competitive firm is not currently making any economic profit, so the total profit resulting from the

[82] See L.J. Arrow, "Economic welfare and the allocation of resources for invention", the economics of communication and information, Princeton University Press, 1962, p. 609 – 626

[83] Defined by J. Tirole, "The theory of industrial organization", MIT Press, 1988, p.392.

innovation represents its incentive to innovate. Therefore, it can be concluded that the threat of competition in itself incentivizes businesses to engage in more innovative practices.

However, one must be noticed that the replacement effect **can be outweighed** while the dominant firms try to conduct R&D investment to pre-empt the entry of potential competitors. The reason why a monopolist would like to pre-empt is a rival would erode the profits. This also means Arrow's results are not inconsistent with large firms being responsible for innovation. In his model, once a firm innovates in a competitive environment, and if the innovation is disruptive, the firm enjoys significant profits.

In addition, these two authors' views will influence and encourage the **development of the antitrust policy in innovation-intensive markets**. To be more specific, if Schumpeter is right, then the antitrust and patent policy need more balance, with the nod given to innovation in most cases. If Arrow is right, which means to some extent, the antitrust can pursue a policy of making markets more competitive and incentive innovation in the process.

Critically visiting two authors' views, some subtleties are overlooked. **Schumpeter's** argument is presented as dominant firms drive innovation, however, it should not be read as a competitive market would harm innovation. Similarly, **Arrow's** definition of competition is relatively broad, and the definition of monopoly is relatively narrow.

To sum up and combine both authors' views to contribute to this paper, **large firms can lead the innovation** within the market because they have more resources, more experience on investment and they have certain pressure[84] from competition which drives them to innovate. Small companies will not innovate a great deal, because they have relatively fewer funds and resources in innovation compare to dominant firms. Nevertheless, **disruptive innovation** cannot be neglect, since such innovation is a matter of life and death for the firms[85]. For dominant companies, they can lose out to an innovative product or service, which eclipses that core market by offering consumers something new. Additionally, Arrow's threat can be applied, if a firm does not innovate, then, absent collusion,

[84] Hard to be specified, it depends case by case, but overall it refers the fear of being replaced.

[85] As being pointed out by Arrow, the difference between the post-innovation rents are incentivize firms to innovate.

it can expect one of its rivals to do so.

4.2 Strategic approach

4.2.1 Theoretical framework

Porter's five forces

To answer the research question, it is important to gain a view of where Facebook is standing relative to its industry, and Porter's five forces[86] (as being shown in Figure 1) is a useful framework in describing Facebook's competitive position within the market. Moreover, it can be used as a tool in helping the researcher to combine previously mentioned economic theories and apply these theories to make relevant assumptions[87]. In addition, since the *industry rivalry* refers to the competitive intensity for the industry and it is influenced by the other four forces, this paper will first analyze these four forces in order to characterize Facebook's business model and describe the *"market"* where Facebook is operating.

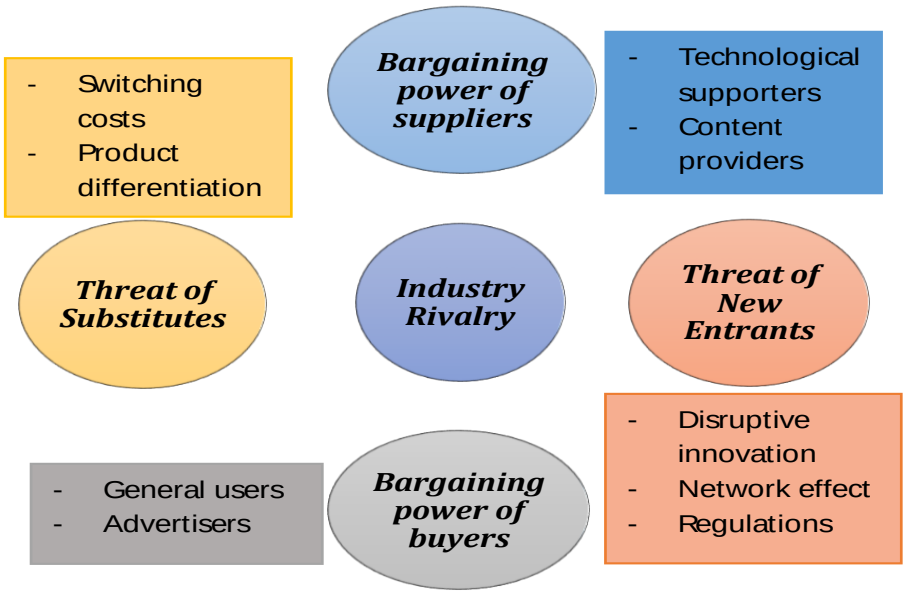

Figure 1 Porter's five forces (1980) and own contribution

Bargaining power of suppliers & buyers

[86] According to Porter "the nature and degree of competition in an industry hinge on five forces: the treat of new entrants, the bargaining power of customers, the bargaining power of suppliers, the threat of substitute products or services and the jockeying among current contestants." See M. Porter, "How Competitive Forces Shape Strategy", Harvard Business Review, 57, p.137.

[87] See Figure 1.

Due to the multi-sided nature[88] of the online platforms, the supplier and buyer sides are not clear. One of the important suppliers to online platforms is the technological supporters such as software providers. The other suppliers are Facebooks content providers including third-party service providers, advertisers or end users. These actors can be considered as buyers since most of Facebook's revenues are generating from ads and data can be deemed as a commercial product in trading and creating profits[89]. The power of the supplier or buyer group depends on a number of characteristics of its market situation and on the relative importance of the sales or purchases to the industry compared with its overall business. To be more specific, the bargaining power of suppliers or buyers is closely related to the switching costs and numbers of players within the market.

Threat of substitutes

The extent of competitive pressure from producers of substitutes depends on the buyers' propensity to substitute and the price-performance characteristics of substitutes[90]. To make profits, companies either trying to lower the cost to have cost leadership[91] or differentiate the products or services with their competitors in creating benefit leadership[92].

The switching costs for online platform users usually are not financial costs but are data-driven values[93] and these costs are enlarged, due to the network effect. Thus, this paper will discuss the specific types of switching costs for online platforms users joint with the discussion of the network effect. In addition, platforms that cater to specific interests or features may substitute each other to certain degree, thus, product differentiation will be discussed.

Threat of new entrants

The new entrants' threat to industry profitability depends upon the height of barriers to entry. For traditional industries, the entry barriers are high if there are high capital requirements for the new

[88] See section 3.2.
[89] Data as a currency. See section 3.2.
[90] In simple term, if the switching costs for the consumers to choose similar products is low, then the threat of substitutes is high. See D. Besanko and D. Dranove, "Economics of strategy", International student edition. Hoboken, New Jersey: Wiley,2017, p.266.
[91] Cost leadership: Charging a lower price but selling a larger volume of a good allows a company to maintain its profits and expand its market share and beat the competitors. See Porter's Competitive Advantage, 1985.
[92] Benefit leadership: Conduct product differentiation and have better price-performance goods or services. IBID.
[93] For instance, for end users, the social networks they have one Facebook, it cost their time in building these connections. For business users, they are targeting the large user based on Facebook and they need these data.

entrants[94]. The entry barriers which created by the existing companies can also be strategic if they have superior access to channels of distribution and achieved large economies of scale[95]. Moreover, the regulations may support or discourage potential competitors to enter the market[96].

Several elements need to be assessed for online platforms to discuss whether the threat of entry is low. First, although the financial-related capital requirements are considerably low compared with other industries, the other elements relative to creating disruptive innovation[97] are important. Secondly, the large platforms can benefit from their scale and the scope of economy and create strategic entry barriers for the new entrants and the network effect will have a significant influence on the new entrants. Lastly, regulations can influence market entry directly[98] or indirectly[99].

Applying the theories and hypothesis development

After Porter's five forces analysis, this paper tends to conclude the industry rivalry of Facebook and describe its business model. Moreover, this paper aims to analyze how the DMA will influence the case company's competition and innovation, it also targets to reflect certain general problems for online platforms. Therefore, this paper will characterize Facebook's business strategies by focusing on the following questions, and relevant hypothesis has been developed based on the acknowledging of economic theories.

1. What kinds of innovation Facebook is trying to conduct?

Hypothesis 1: To build a mega-app Facebook will have to engage both in process and product innovation.

The previous stage of process innovation can appear as product innovation[100]. *Facebook, Inc.* is trying to build up the *mega-app* based on the market trend, thus it keeps introducing new functions into its own platforms, either through acquiring or imitating the emerging applications. It naturally leads us

[94] Economies of scale and capital requirements positively correlated with high profits and create the entry barriers. See J. Bain, "Barriers to New Competition", 1956, Cambridge: Harvard University Press, p.3

[95] See M. Porter, "Competitive Strategy: Techniques for Analyzing Industries and Competitors," New York: Free Press,1980, p.9-13.

[96] Supporting regulations such as tax benefits to encourage new firms to enter. Regulations that protect the existing firms can create certain entry barriers to the new entrants and patent protections is one of the examples.

[97] Such as advanced technology: AI, algorism or knowledge: business ideas, innovative business models, etc.

[98] Direct regulations such as the Chinese Great firewall.

[99] Especially regulations that protect intellectual property rights can favor large firms and create barriers to new entrants. Because some business opportunities might rely on existing technologies and just use a new way in organizing the business: new business models, etc.

[100] See section 4.1.1 under the title "Product and process innovation".

to wonder why Facebook wants to build the mega-app or what is the intention of such kind of innovation and here comes the second question.

2. What drives Facebook to innovate?

Hypothesis 2: Facebook's main competitiveness driver is the fear of being replaced.

The discussion of this question combining multiple theories. Concerning the firm size and the importance of disruption, large firms like Facebook need to maintain their competitiveness through sustaining innovation. However, these large firms cannot neglect the importance of creating disruptive innovation. As a competitive response of future potential competition, the incumbents need to seize the opportunity and pursue disruptive innovation by themselves.

3. How to approach Facebook's competition?

Due to the multi-sided nature and network effect it is hard to define a market for the platforms. There are two main problems worth to be discussed: *Who are the suppliers and buyers for Facebook?* and *What is the market Facebook is operating?* By following DMA's description in setting the main groups, namely, business users and end-users, the following hypotheses have been established:

Hypothesis 3: Facebook's business users are competing in price.

Hypothesis 4: For end-users, Facebook is conducting non-price competition.

The companies' strategies will depend on their competitive position, where they will make business decisions in maintaining their competitiveness. For instance, if hypothesis 4 is true, then Facebook will try to increase product differentiation for attracting different types of consumers, and hopefully hook the users.

4.2.2 Porter's Five Forces

As mentioned, Facebook's competitive market structure is a monopolistic competition market[101], and it is not easy to say who is directly competing[102] with Facebook. In this section, it assumes Facebook is mainly competing with the other social networking platforms, and Facebook as the case company

[101] See section 4.1.2.

[102] The competitors are supposed to provide exactly same products or services. However, all the online platforms capture certain similar features or function but still slightly different with each other. E.g. Facebook and Google both have search function but their design of usage are different.

has been analyzed from following dimensions.

Bargaining power of suppliers is low. First, the main suppliers are the technological supporters, who provide computing and network technology or equipment, as well as office suppliers. Since there are large numbers of suppliers which far over the digital platforms' needs, thus, their bargaining power is weak. Especially for large platforms such as Facebook, they will always choose the suppliers who capture the most advanced technology to cooperate and acquire the talents. Second, content providers including third-party service providers or individual users are also weak forces, due to the same reason: supply is far over the demand.

Bargaining power of buyers is moderate. There are mainly two groups of buyers of Facebook's services, namely, individual users (end-users) and advertisers (Business-users)[103]. If only consider the financial cost as the switching cost, these two buyers' bargaining power is high, since the substitute availability is high and especially for the users the switching cost is zero, as the service is charging for free. While if considering the network effect, from the user side, the time they consumed and the connections they have built on Facebook can be considered as the sunk cost, once they left this platform and no longer use it. Thus, except there is an extremely powerful social network platform that appears and can replace Facebook totally, there is a limited chance that current end-users will abandon Facebook. Even there are newly appeared platforms they would try or use, it just means they might be less active on Facebook. Due to the indirect network effect with the end-users, the advertisers' decisions will be made based on the quantity and quality of the users' data. In other words, if the end-users stay then they will stay too. And thus, it drags back the bargaining power to moderate.

Threat of substitutes is moderate. As mentioned, the market structure of the online platforms' competition is the monopolistic competition[104]. Each social networking platform can be an alternative to the other to a certain degree, since they are playing similar roles in intermediating social networking activities for different users. However, they are slightly differentiated, either in the consumer groups or the certain specific services, which make them distinct and cannot be replaced by each other. One

[103] Even though third-party services providers can also be considered as buyers, since most of the revenue Facebook is capturing is from advertisers, here only discuss the advertisers as the buyer. Moreover, the third-party's role to Facebook is similar to the advertisers and thus, discuss one can have certain insights for the other.

[104] See section 4.1.2.

example, LinkedIn, can represent and support this argument. It basically shares the same functions as Facebook[105], yet, they are targeting different users. It can be said that LinkedIn is for business usage[106], and Facebook is more for casual or private usage. Even if there is a platform exactly the same as Facebook, its user accumulation will not exceed Facebook, which means it is hard to challenge Facebook's position within the market. Because the buyers will not easily leave Facebook[107], it is the problem caused by the economics of scale[108]. However, it is possible there is a great competitor who can replace Facebook to a certain degree or in certain regional market, thus, the threat of substitutes is moderate[109].

Threat of new entrants is moderate. As being discussed, the financial cost for business users or end-users to move from one service provider to the other is low, due to network effect, it is not easy for them to choose the new service provider[110]. However, since it charges for free, in a large chance the individual users are willing to try and experience the new platforms, and if that platform is distinguished which can be viewed as a disruptor[111], then it might be successful. The new entrants need to have the potential to disrupt the whole market or achieve a large share of the market in order to compete with the existing firms. In this case, also due to network effects, the value or reputation can be built rapidly[112].

Snapchat[113]can be used as an example in comparation with *Instagram*[114], and previous arguments are supported. The history of Snap and business ideas are similar to Facebook, both of them initially target campus usage and allow person-to-person chats or information sharing. However, *Snapchat*

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[105] Intermediate role. Allow chats, posts, etc. different types of social interactions on the platforms.

[106] For instance, organizations can post job advertisement on this platforms and users can apply or comments.

[107] Which has been mentioned in previous paragraph "users' time … as sunk cost".

[108] Also influenced due to network effect.

[109] The uncertainty of the replacement. For instance, WeChat is an example, all the products or functions Facebook has WeChat has too, or WeChat even have better performance, if it comes into a certain region which is a new market and competing with Facebook, there is a certain chance Facebook position will be challenged such as Huawei to Apple, or Tiktok to Instagram.

[110] If using the traditional business approach, it can be understood as the power of the brand image, etc. People choose or trust the producers they are familiar with or have a good reputation and can be recognized by others.

[111] Either target to low-end disruption or new-market disruption. See section 4.1.1 under the title of "disruptive innovation".

[112] For instance, you use the platforms and recommend to your friends and they recommend their friends, etc. In social study, there are theories about the social network effect in regarding to the information spread speed, how information deliver and influence, etc. Moreover, there are other literature in arguing the durable effect of the network effect. See D. Evans & R. Schmalensee, "Why Winner-Takes-All Thinking Doesn't Apply to the Platform Economy", Harbard business review, 2016.

[113] Which developed by Snap Inc. in 2012. It is a platform which allows photo sharing, Instant messaging, Video chat, etc. It mainly captures social networking platforms features but also other types of platforms features such as video-sharing.

[114] See the comparation of these two companies (and their two platforms: Snapchat and Instagram's maker value, types of products or services, active users, etc.) Accessed from: https://craft.co/facebook/competitors, on 24.08.2021.

has specific features: *pictures and messages are usually only available for a short time to their recipients*. This "*read and disappear*" is attractive to teenagers and Snapchat became the most-used teen app in 2016, while its daily active users have been consistently growing since 2014 and have doubled to 150 million since then. In other words, it can be viewed as a disruptor that targets small segments: teenagers and due to teen's needs[115] in designing the function which allows it gradually catching up to Instagram and competing with it.

Moreover, regulations can have direct or indirect effects on new entrants. The direct regulations in banning or permitting the usage in certain countries are rare cases[116], while the other regulations, such as regulations that protect IP, can be utilized by the incumbents in protecting themselves or create strategic entry barriers to the new entrants. For instance, the internet companies always sue each other to ask for injunctions and pin each other down and a similar approach can be taken to the new entrants in order to hinder the development of the new firms[117].

To be brief, the regulations might allow certain advantages and protect the existing companies, and the non-financial entry barriers are high, thus, it seems there are no needs for Facebook to worry about the new entrants influencing its profitability significantly and rapidly. However, if taking a developmental perspective in thinking of this, due to the importance of the disruption and the power it has, the new entrants might grow swiftly and have the power to compete with the existing firms or even replace them, and thus, the overall threat of the new entrants is moderate.

4.3 Facebook's competitive position and business model

In this section, Facebook's industrial rivalry and its business model will be briefly described. Also, this section will discuss Facebook's business strategies especially in relation to competition[118], and the four hypotheses[119] will be testified.

Overall, the **direct competition** Facebook is having is **not too intensive**, since these large social

[115] Teenagers usually adopt digital services quickly and they are pursuing interesting and fresh things.

[116] For examples, Chinese great firewall ban Facebook, etc. to be used in China or Trump ban the TikTok in the US.

[117] Because certain type of development of the new business might rely on previous knowledge and information, economic theories such as Arrow: Information is a commodity, see Ch.9 "Competition and innovation" of "The Making of Competition Policy: Legal and Economic Sources", New York: Oxford University Press, 2013, p. 288.

[118] How they maintain their competitiveness.

[119] See 4.2.1 under the title "Applying the theories and hypothesis development".

networking platforms are differentiated from each other in a certain degree. But Facebook is having **intensive indirect competition** with a lot of firms. On one hand, it is competing with the other large firms, not only social networking platforms but also other types of platforms who have similar features with its own products[120] or whose revenue largely depends on the advertisers. On the other hand, it needs to take a **dynamic perspective** in noticing the newly appeared popular platforms who might be a disruptor and has the potential in influencing Facebook's profitability in the near future.

For Facebook's business model, the core of its business model relies on the **network effect**. Facebook mainly faces two sides of markets[121], one to the end-users and the other to the business users. For Facebook, both direct and indirect network effects are present on its end-users' side. **First,** the value that an end-user derives from the social network platforms increases in accordance with the number of other end-users on these platforms, due to the fact that the more individual users on this platform, the more these individual users can interact. **Secondly,** social networks platforms do not offer content by themselves, but provide the means for different users[122] to interact and create content in the form of profiles, posts, and other types of information. While reaching a certain size, this type of platform will have the self-sustaining operating system[123]. Moreover, the more users join this system, the whole system's value or efficiency improves gradually due to the indirect network effect. And not only the quantity of the users is important, but the quality of these user data is also important. This means Facebook needs to acquire more users, but at the same time, it needs to keep the users stay active to improve its data accumulation[124] and this is an endless circle. Therefore, in this context, a social network has to keep expanding to help itself to maintain the **competitiveness**.

Network effects can create great value rapidly, but they **can destroy** it just as fast. Although network effect can be viewed as one of the entry barriers of new firms, because new entrants cannot acquire

[120] For instance , Google search and Facebook, since both of them have search functions, even their business have different main focus, they are still competing in certain way.

[121] If we consider the second hand transaction between individual users, there might be more sides of markets. However, when they are conducting the transaction, one side can be assume playing a business users role in providing product, and thus, here only discuss two-sided: end-users and business users.

[122] For instance, third parties provide services and end-users use these services.

[123] Only reach a certain size, the system can work. The basic logic is similar to the search engines search function, the more data they have the more accurate results they could provide. While in this case, social network platforms gather data about the activity and connections of users on their platform and use this information to select the most relevant social interactions to be displayed to users.

[124] Data's value lies in its quantities but also accuracy and their context. Only with these context, Facebook can push more target and accurate results.

large scale of the market share in order to compete with the existing platforms, a disruptor can benefit from it as well[125]. As discussed, once a **disruptor** appears, it might have the chance to influence Facebook's profitability in certain degree or in regional market, if they could have the first-mover advantage and accumulate the users in having network effect ahead. Thus, Facebook should always worries someone might eroge its profitability.

On the business users' side, there is **no positive network effect**. The more third-party services providers or advertisers are the more intensive competition among these business users. The display of additional services or advertisements may impose a cost on these business users who have already operated business on Facebook since they have more competitors. Accordingly, Facebook may be able to **impose higher prices on these business users**. Taking advertisers as the representative, when the demand for displaying advertisements rises, they might have to pay more to ask Facebook to help them promote their advertisements.

Overall, Facebook's competitiveness mainly lies in the network effect. To be more specific, they need to **expand** their market in acquiring as many end-users as possible by enlarging the direct and indirect network effect on this side for attracting the business-users on the other side and exploit the indirect network effect. Moreover, they need to be aware of the **disruptor** who has the ability to compete with it. Therefore, Facebook's business strategies are supposed to focus on expanding itself in maintaining the existing users and it also needs to keep fulfill and identify the overlooked segments.

To be more specific, for end-users, Facebook needs to provide various products or services to attract different types of users[126] and try to do **product differentiation** in making itself outstanding among the online networking platforms. They also need to know the market trend and acquire **new** users. In short, having new products or services and attract new users is also one way to maintain and providing better services to their existing users to make these users stay active on this platform. The markets need to be **expanded both on breadth and depth**. For instance, Facebook tried to buy Snap in 2013, and the Snapchat's founder and its CEO turned down the offer[127]. But latter, Facebook's Instagram

[125] See previous section under the analysis of threat of new entrants.

[126] Different age bar, different habits, etc.

[127] There are other companies, such as google, also want to buy Snapchat and these information can be easily found in the news. For instance, BBC news, Accessed on https://www.bbc.com/news/business-37995890, on 16.08.2021.

has developed the similar function as it is in Snapchat, the "stories"[128] are only visible for 24 hours. This means Facebook tried to take proactive action by buying its potential competitor and when it did not work, it imitated and learned from its competitor by having product innovation in complementing its market segments, which **verified the first hypothesis**: *To build a mega-app Facebook will have to engage both in process and product innovation.* The **second hypothesis needs to be rephrased**: Facebook needs to keep innovating in order to maintain its competitiveness and as a proactive response to the potential competition. The **fourth hypothesis[129] has been verified too,** since Facebook is conducting product differentiation in having benefit-leadership and cost-leadership[130] at the same time.

For the business users, Facebook would like to engage these business users by showing them Facebook will be their best choice, where the quantity and quality of the users' data will the proof and value to attract these business users. Once it can maintain its dominant position, it can try to impose costs on these business users in making more profits, which **proved the third hypothesis**: *Facebook's business users are competing in price.* Moreover, Facebook also needs to enhance business users' dependency and prevent certain third-party service providers become its future competitor. Thus, they will try to control the data.

4.4 Large online platforms' competition

Depending on the previous analysis, this section aims at pointing out the general problems related to competition for large online platforms. First, it will discuss the main competition issues of online platforms by focusing on the role of the data. Second, it will revisit Schumpeter and Arrow's arguments discussing online platforms' innovation, because their views will influence the development of antitrust policies.

The running of online platforms all rely on **data and network effects** to a certain degree. It has been revealed that both direct and indirect network effects are playing important roles for social networking

[128] The video or picture you can share on your Instagram account.

[129] For end-users, Facebook is conducting non-price competition.

[130] Although most of the social networking platforms are charging for free, due to network effect, Facebook can provide more targeted advertisements or services to the end-users, which means it is more efficient and price-performance is better than the other platforms.

platforms. However, for other types of platforms, such as online search engines or online marketplaces, the indirect networks play the main role[131]. Unlike the social network services, for online search engines or online marketplaces, the end-users do not directly benefit if others use the same search engine or e-commerce platform. They benefit from the total users' number increasing on the same platforms. For instance, the more users on the search engine, the larger the dataset and the better results it can give the users. Thus, they will always try to **enlarge** their user base, and **expanding** in market share is the most direct way to reach the aim.

Moreover, all of them have a certain percentage of revenues are driven by the **advertisers**. In this sense, they all compete on the same market by using data as the currency to attract investment from the advertisers, and none of them have won this market. Because there is **dynamic competition** in this market, one can perform better in a certain period if they are popular and have accumulated more active end-users at that time. It is important to notice that the more data the platforms have the more **targeted advertisement** they can provided. Better targeted advertising services will give the advertisers more opportunity to increase its revenue. One example is the pay-per-click advertising model, which refers the advertiser only pays the platforms when an end-user click that advertisement. Accordingly, the platforms need to have larger quantity and better quality of the data in order to upgrade their algorithm and to be more targeted. Taking Instagram as the example[132], according to your interactions on the platform and your information, they try to characterize your preference and promote targeted advertisement.

Moreover, for all the platforms, some problems should be noticed. First, all of them will try to enlarge their user base and try to lock in them in order to make them stay active. Especially for social networking platforms, because exaggeratedly, without these end-users, Facebook owns nothing since it is only playing an intermediate role. Second, platforms will try to control their data, for instance, control the distribution of the data by gateway the access of the data, which is due to two reasons. The primary one is to stay attractive for the advertisers. And the other reason is to prevent the

[131] G.A. Manne & J.D. Wright, "Google and the Limits of Antitrust: The Case Against the Case Against Google", Harvard Journal of Law & Public Policy 2010, vol. 34, no. 1, (171), p. 211.

[132] See Appendix B: including your ads topic preference; your own settings; permit to combine Facebook and Instagram data; Information about the Ads; Sensitive topics: political, etc.

disruption because some disruptors might have a way to reorganize and utilize the data to conducting the business and eroge their revenues. Thus, the **data has a durable role** in impacting the network effect and influence online platforms competition.

The second part of this section is revising the two authors' views in applying on the online platforms competition and innovation. First, it seems Schumpeter's views are more applicable to the online platform market. A **dynamic and long-term perspective** in viewing competition and innovation is needed. For large firms, their profitability is driven by expansion. Thus, in maintaining their profits, they need to keep innovating for upgrade the existing products or services to be attractive for the end-users. While according to Arrow, the monopolists will keep investing in existing profits and do not innovate. However, for the large online platforms, the way to maintain or promote its current profits is to innovate, expand, and attract more users.

Moreover, they will innovate because of the fear of being replaced as **competition pressure** will constantly exist since it is a monopolistic competition market. Even if someone's dominant position is being challenged, new large platforms will appear because being large is the most efficient way to make profits. Thus, Arrow's view about the threat to incentive innovation[133] will always apply for the online platforms, because there will always have someone to give them the competition pressure. To be more specific, the competition pressure to large platforms comes from two aspects: among the large online platforms, they need to compete with each other to attract advertisers; and the disruptors, who are hard to predict and highly influential.

Large firms can only take a **proactive approach** to the disruption **as a response to the potential competition**, they need to be the disruptor by themselves through examining any overlooked segments and fulfill them. Compared to SMEs, the large firms might have more chances to innovate because they have more experience, and thus, they can foresee the market trend and have more resources to conduct the plan. However, the creation of disruption is full of uncertainty, in other words, it is hardly predictable. For instance, it might be just a business idea in a flash. In preventing the

[133] See 4.1.2: Arrow argues the reason need to encourage competition because the competition will bring pressure to the market in encourage everyone to innovate. While if there is monopolists, they would not feel pressure because they already making significant profits.

creation of the disruptor, large firms usually conduct killer-acquisition or just imitate or copy[134]. Additionally, they will control the access to the data to limit the third parties for protecting themselves. However, these actions might limit the ability of others to create the business, and affect the fairness of the competition. That is **the reason why large online platforms** need to be regulated in order to address the competition issues, the DMA takes the **ex-ante regime** and focuses on the gatekeepers by including specific obligations or prohibitions in **related to the data**.

5. Legal analysis

5.1 Challenges in applying competition law to platforms

The main aim of the competition law is to ensure efficient markets and fair competition by avoiding collusions and the abuse of dominance. The digital economy poses particular challenges to the existing competition law in practice.

First, the existing competition law focuses on price, but the platforms usually **charge for free** to attract users. And some basic concepts in competition law[135] are difficult to apply when regulating the platforms. In this section, only the problems relevant to the research aim will be mentioned. Due to the multi-sided nature of the platforms, the primary problem is the **definition of the relevant market**. Traditional competition law is designed in asymmetry to the economic regulations. To be more specific, traditionally, the SSNIP test[136] would be applied in order to define the *relevant markets*. However, the test is not designed to take into account the zero-price-side of the market, where users pay with their data and thus, the competition law is not effective to solve the market power issues identified within the digital markets.

In addition, due to the **cost structure** of the tech companies[137], with nearly zero marginal costs of distribution, platforms can accept low or no returns on one side of the market in order to accumulate more general users and exploit the business users on the other side(s). In addition, there are also some

[134] Such as the Snapchat case.

[135] Notably, the definition of relevant market, the market power (or dominance), etc.

[136] Based on the economic methodology and use the concept about substitute in order to identify whether it is competing in the same market. The SSNIP test can be applied to supply-side substitution by postulating whether the price increase would be rendered unprofitable by the suppliers moving to produce the product. See G.Niels, 'The SSNIP Test: Some Common Misconceptions', 2004, Comp Law 267; Bellamy and Child, n.16, 4.055-4.062.

[137] See section 3.3 explanation about "winner-takes-all" and the extreme and increasing return to scale.

interpretive issues which mainly caused by the multi-sided nature of the platforms and questions such as "*what is the position of platform in the vertical chain*[138]*?"* can be asked. For example, for Facebook, the buyers and suppliers are worth to be discussed in order to identify the substantial market power. Moreover, the present competition law concerns only with the abuse of dominant position or market power[139]. As discussed, platforms tend to be "winner-takes-all", thus, the **dominant position itself becomes an issue** for themselves are the (only) owners of the market[140] and the present competition measurement cannot deal with this kind of situation.

Lastly, for digital platforms, the problems of **data-driven abuse** are worth to be addressed and it is asking for a more flexible approach in assessment for abuse of dominance in the digital economy. Currently, the EU is addressing these problems with an indirect approach by mainly focusing on consumer welfare and interact with the data protection law[141].

However, the competition authorities have paid more attention to the **innovation competition**[142] with the rise of the digital business, and they try to **use data as a non-price parameter** in assessing competition. This is because the digital economy has applied a dynamic competition paradigm[143] and innovation plays a crucial role in the competition of the platforms. It could have important consequences in finding dominance of a multi-sided undertaking. For example, innovation would explain the limited role of traditional market power indicators like market shares and concentration levels in evaluating market power. Therefore, the digital competition policies are increasingly focused on the value brought by innovation and how these values are captured, shared, and generated, where the three processes are intrinsically linked. Moreover, since *price* cannot be used as a parameter in accessing the competition efficiently, the focus of competition authorities switches to innovation competition and focus on the *data*, including the access and the usage of the data.

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[138] Related to vertical integration. It allows a company to streamline its operations by taking direct ownership of various stages of its production process rather than relying on external contractors or suppliers.

[139] See Art. 102 TFEU, Chap. 6 and 7 about the abuse of a dominant position.

[140] "Becoming the owners of the infrastructures of society." See N. Srnicek, 'Platform capitalism', Polity press, 2017, p.92.

[141] For instance, the General Data Protection Regulation (GDPR) has been applied since 2016, while the major problem this regulation is targeting is the data privacy problems, however, it is also highly related to the competition issues. For the relationship between EU data protection and competition laws, see F.Costa-Cabral and O. Lynskey, 'Family Ties: The intersection between data protection and competition law in EU law', 2017 (54) CMLRev 11.

[142] See section 3.3 summary about the "ecosystem".

[143] Competing for the market instead of competing in the market, see section 3.2. Through the improvement of the productivity and the introduction of new products or services, see J. Sidak, D. Teece, "Dynamic competition in antitrust law", Journal of Competition law & Economics, 2009 (5).

The policymakers rethink **the role of data**, and they already attempted to place it in the competition law practice. For instance, at the national level, the Germany amended its Competition Act (the GWB) to explicitly mention access to data as one of the factors in the assessment of market power and added new thresholds in respect of merger notifications[144]. Taking a specific legal case as an example, the Bundeskartellamthas[145] ruled that Facebook abused its dominance by improperly combining user data from WhatsApp[146]. In this case, the **relevant factors**, such as access to competitively relevant data, economies of scale based on network effects, user behavior, and the power of innovation-driven competitive pressure, are considered in its market power assessment. This case has indicated that there is a tendency that in regulating the digital economy, the competition law enforcement needs to integrate the interface between competition law, consumer protection, and data protection. At the EU level, the Commission's Report has also recognized the significance of data and access to data, which may play a role in future competition policies development and market power assessment[147].

Overall, the traditional competition law has the following inefficiency in regulating the platforms. First, the traditional competition law concept of a "market" does not fit the platforms' business model, where consumers ostensibly provided with free services are in reality paying with their **data** or where the users themselves provide the content of the service. Second, for the platforms, the **dominant position** is becoming the issue that policymakers are supposed to address instead of focusing on the abuse of the dominant position. Lastly, the competition for the tech companies is focused on innovation competition and tries to apply **data as a non-price parameter**, instead of the price, in accessing competition. Accordingly, additional conceptual tools need to be developed to access restrictions on competition[148] and prevent data-driven abuse.

5.2 Ex-ante

Competition law normally acts **ex-post**, other than merger control rules act ex-ante[149]. Ex-post rules

[144] Which are designed to catch transactions involving companies with significant competitive potential but which at present have little or no turnover. This is often the case with new companies with innovative business models and thus, prevent "killer acquisitions".

[145] German Federal Cartel Office - "FCO".

[146] Bundeskartellamt Decision B6-22/16 of 6 February 2019 on Facebook: 149, 159, 160, 165, 169, 170, 173, 175, 179, 194, 224, 237, 238, 239, 240, 241, 286, 289, 290, 294.

[147] See Report on Competition Policy for the Digital Era, European Commission, 4 April 2019, n.382, Chap.5

[148] Refers to both vertical and horizontal competitions. Platforms either try to acquire or innovate by themselves to conduct horizontal and vertical integrations at the same time in order to occupy more market shares or having more relevant markets.

[149] The EU merger regime requires prior notification of mergers with a 'Community dimension'. See R.O'Donoghue and A.J.Padilla, the law and

are a set of general rules which apply after a problem has arisen. In other words, they apply after a firm commits certain conducts. There are two advantages of using this kind of regulation: more predictable and less discriminating. However, the weakness is: it is potentially **less effective** since it only has deterrent effects. Especially for the digital economies, the competitive harms are not remediable ex-post, because the large platforms are "being the owners of the infrastructure of society[150]". Moreover, the **procedures** such as investigation and assessment usually take so long and cannot respond to the digital economy efficiently.

The DMA proposal departs from a classical competition policy approach in suggesting an ex-ante regime on large platforms. **Ex-ante regulations** identify and prevent the expected or prohibited conduct in advance by shaping stakeholders' behavior through specific rules. While the traditional antitrust approach is primarily concerned with protecting undistorted competition, ex-ante regulation embraces a different set of objectives such as contestability and fairness. In other words, instead of acting after a market distortion to correct the problem, the DMA was proposed in order to provide **upfront clarity** about what behavior towards users and competitors will be considered acceptable.

In the competition law practice, the ex-ante method has been applied in some merger and acquisition cases where **merger control**[151] has been applied as the remedy in anticipation of the potential violation. By applying the ex-ante regime, the remedies are imposed in advance on the actors who have **significant market power (SMP)** in some pre-determined markets. In other words, in practice, it requires identifying the markets on which intervention is needed, and then imposing remedies on those corporations and shape their behavior in advance. Having a **proactive approach** to regulate the online platforms, **flexibility** is the most obvious advantage of such solution. Moreover, compared with the ex-post regulations, it works more effectively because its investigative requirements would be significantly lower than those of competition law[152].

Economics of Article 102, 2nd edn, Hart Publishing, 2013, p.44-47.

[150] The dominant position itself is a problem. See section 5.1, "The challenges in applying competition law to platforms".

[151] For instance, the reviewing authorities carry out their assessment before the transaction is implemented.

[152] DMA could prevail over the application of competition rules in practices, shifting the burden of proof on platforms that reach the quantitative thresholds to demonstrate that they are not gatekeepers, and no need to demonstrate harm to consumers, among others.

This regime is only tried in EU telecoms law[153], and it has never been practiced or testified in other cases, hence, the disadvantage of the ex-ante approach lies in the **novelty**. In addition, there are several potential problems if the new regime was eventually adopted. First, in practice, it is not easy for the authorities to have a standard in identifying an enterprise with significant market power and provided relevant evidence then impose remedies on it, which also means more terms and obligations need to be specified and clarified. Secondly, from the compliance perspective, both for regulatory or incumbent, it requires huge investment to build up the new system of infrastructures in monitoring and applying the new act.

5.3 Gatekeepers

Starting from the definition, the 'Gatekeeper' is a new legal term proposed in Article 2 (1) of DMA, which refers *providers of* ***core platform services*** *(CPS) that satisfy* ***three cumulative criteria***[154]. Therefore, the scope of the DMA is limited to **eight types**[155] of CPS including: (a) online intermediation services; (b)online search engines; (c)online social networking services; (d)video-sharing platform services; (e)number-independent interpersonal communication services; (f)operating systems; (g)cloud computing services; (h)advertising services[156] and the Commission also provides specific explanation and definition of these CPS within the same Article.

In short, these business models share several common characteristics. They usually cover extreme economies of scale and scope, and thus, they have the significant market power inherited by the network effects. Moreover, due to their intermediate role and market positions, they are possible lock-in users and take data-driven advantages. These are typical problems of the platform economy, however, when these problems have been applied cumulatively will lead to market concentration, as well as dependency and unfairness issues. The existing EU laws, such as the EU competition law, cannot address these problems efficiently[157]. Therefore, DMA is designed to point out the **scope** and

[153] The ex-ante regulation is currently used in EU electronic communications markets, where remedies are imposed in advance on selected enterprises designated as having significant market power. See Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a Common regulatory framework for electronic communication networks and services.

[154] See Art. 3 of DMA: Designation of gatekeepers.

[155] See Art. 2 (2) of DMA.

[156] Including any advertising networks, advertising exchanges and any other advertising intermediation services, provided by a provider of any of the core platform services listed in points (a) to (g).

[157] Which has been discussed in section 5.1. For instance, the dominant position itself is the problem.

set boundaries of those services and suggest addressing these problems from the **services level** by setting legal interpretation of those boundaries.

According to Article 3 "*Designation of gatekeepers*" [158], 'gatekeepers' are entities that:

1. have a significant impact on the internal market[159];
2. control of an important gateway for business users towards final consumers[160] and
3. enjoy or will foreseeably enjoy an entrenched and durable position in their operations[161].

There are three steps in explaining how the DMA works in practice. First, the companies will have to verify themselves if they meet all the pre-defined quantitative thresholds unless they submit substantiated arguments to demonstrate the contrary. The draft DMA establishes a **rebuttable presumption**[162] for qualifying as a gatekeeper. Moreover, the Commission would be empowered to adopt delegated acts to specify the methodology for determining and adjusting the quantitative thresholds[163].

Second, the Commission can qualify the gatekeeper through **qualitative assessment**[164]. To be more specific, if not all these thresholds are met, Commission may evaluate the platform's **relative importance** and start the **market investigation**[165] to identify the gatekeepers. In such context, smaller companies can also be qualified as emerging gatekeepers given foreseeable market developments.

Last, within six months after a company is identified as a "gatekeeper" they will have to carry an extra responsibility with specific obligations and prohibitions, which will be specifically analyzed in the next section.

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[158] Original text see Appendix C.

[159] The company annual turnover in the EEA equal to or above €6.5 billion in the last three financial years, or where its average market capitalization or equivalent fair market value amounted to at least €65 billion in the last financial year, and it provides a core platform service in at least three Member States.

[160] Operates a core platform service with more than 45 million monthly active end users established or located in the EU and more than 10 000 yearly active business users established in the EU in the last financial year.

[161] Presumed to be fulfilled if the company met the other two criteria in each of the last three financial years.

[162] See Art. 3(2) whereby the burden of proof is on the company to rebut the presumption. The rebuttable presumption applies if the following two quantitative tests are fulfilled.

[163] See Art. 37 of DMA: Exercise of the delegation.

[164] See Art. 3(6) of DMA.

[165] See Art. 32 of DMA: Digital Markets Advisory Committee.

For now, the three criteria seem to include the following quantitative and qualitative indicators which influenced by the economic concepts and can be assessed from the **firm level**[166]:1. Size, operation, and position[167]; 2. Number and types of users[168]; 3. Entry barriers[169]. By doing so, it reduces asymmetry of information between the Commission and the gatekeeper, and allows the Commission to designate a gatekeeper not only based on quantitative indicators such as its financial and user size, but also correlated the gateway power which is a qualitative measurement in its relevant importance. Therefore, the gatekeeper position is presumed to be held, when a CPS provider has an important **size** for all its operations and when many EU end-users and business users are **relying on** the CPS provider. Accordingly, the 'gatekeeper' can **rebut** the presumption by showing that even though they meet the quantitative thresholds, they do not have or use the gateway power, and business users are not dependent on it to reach the end-users. In addition, the Commission expects to identify **10-15 gatekeepers** based on the quantitative thresholds, which is questionable since the DMA gives the leeway to the regulators.

There are **three purposes** of market investigations under the DMA: (a) identifying gatekeepers; (b) identifying whether other services within the digital sector should be added to the list of core platform services, or whether new practices appear which risk having the same detrimental effects, and (c) designing additional remedies for those gatekeepers who have systematically infringed the rules of the DMA. In addition, **member states** can play a role in participating the digital markets advisory committee to support the commission in market investigation[170], and while there are at least three member states in requesting, then the commission would be bound to open a market investigation to determine whether if a CPS provider should be designated as a gatekeeper[171].

[166] See A. Streel, R. Feasey, J.Kramer, G. Monti, "Gatekeeper definition and designation", issue paper, CERRE, May 2021, p.13

[167] For instance, very high turnover derived from end-users of a single CPS, very high ratio of equity value over profit, etc.

[168] For example, End-users or business users lock-in.

[169] For instance, network effects and data driven advantages, economic scale and scope (including data).

[170] See Art. 32 of DMA "Digital Markets Advisory Committee".

[171] See Art. 33 of DMA "Request for a market investigation".

Last but not least, the DMA provides for a **review clause** that allows the Commission to amend repeal gatekeeper status at any moment. And it requires the Commission to review whether the designated gatekeepers continue to satisfy the criteria at least every two years.

To be brief, there are several points worth to be emphasize. First, only providers of CPS may be designated as gatekeepers. Secondly, the Commission can designate the gatekeeper both quantitively and qualitatively, through size and turnover thresholds and market investigations. Thirdly, it gives the flexibility to the regulator to adjust or review the act in order to adapt the dynamic digital environment.

5.4 Obligations and Prohibitions

Before moving into the discussion of the obligations and prohibitions under the DMA, it is worth clarifying the regulatory scale and scope of DMA again. The DMA regulates core platform services rather than the company involved. This means a platform can be designated as a gatekeeper for one or more CPS. It also means that the obligations under the DMA would not apply to all of the platform's activities, just to which have been designated under the DMA. For instance, Facebook can be designate as a gatekeeper for its social networking services, but it does not mean Facebook holds a gatekeeper position on its marketplace services. Thus, the obligations and prohibitions under DMA are specifically targeting to those gatekeepers who have the significant market power to gateway users in certain CPS.

The DMA takes a **two-pronged approach** with Article 5 *"Obligations for gatekeepers"*[172] and Article 6 *"Obligations for gatekeepers susceptible of being further specified"*[173]. There are eighteen proposed obligations and prohibitions listed under these two articles. To be more specific, for Art. 5, Commission has mentioned this article as a *self-excusing* or *quasi-automatic* list of obligations, which means these requirements are directly applicable. While for Art. 6, Commission needs to provide further explanations or guidelines. This section will discuss and try to **classify** these obligations and only several obligations and prohibitions will be used as examples in supporting the main arguments. In order to have a clear overview of these obligations and provide better acknowledging for the

[172] See the Appendix D for the proposed draft.
[173] IBID.

readers, here attached a summary of these obligations[174]:

Art.	Summary of the obligation	Which CPS relevant
5a	No data fusion without user consent	All
5b	No wide most favored nation (MFN)/parity clauses	a (app stores and marketplaces)
5c	No anti-steering	a (app stores and possibly marketplaces)
5d	No prevention of raising issues with public authorities	All
5e	No tying to business users from CPS to ID services	All
5f	No tying from CPS to other CPS	All, but needs at least two regulated CPS
5g	Price transparency for ads	h
6.1a	No use of data related to business users to compete against them	a (app stores and marketplaces)
6.1b	Allow un-installing of apps, unless essential to operating system (OS)/device	a (app stores) and f
6.1c	Allow 'side loading' of third-party apps or app stores, unless threatens the integrity	a (app stores) and f
6.1d	No self-preferencing in rankings	a,b,c and possibly f
6.1e	No technical restriction of switching or multi-homing across apps using OS	f and (arguably also) app stores
6.1f	Access and interoperability for business users and ancillary services to OS should be as for proprietary ancillary services	f
6.1g	Performance transparency for ads	h
6.1h	Provide real-time data portability for end-users	All

[174] See A. de. Streel, R. Feasey, J.Kramer, G. Monti, "Obligations and prohibitions", issue paper, CERRE, May 2021, p.12

6.1i	Provide real-time data sharing for business-users	a (app stores and marketplaces)
6.1j	Data sharing obligation: fair, reasonable and non-discriminatory (FRAND) access to click and query data	b
6.1k	Fair and non-discriminatory terms of access to app stores	a (app stores)

Notice: a: Online intermediation services; b: Online search engines; c: Online social networking services; d: Video-sharing platform services; e: Number-independent interpersonal communication services; f: Operating systems; g: Cloud computing services; and h: Advertising services.

These obligations try to address the online platforms' anti-competitive behavior from the following perspectives: **a)** the tying, bundling, and self-preferencing; **b)** App stores; **c)** Advertising; **d)** data sharing. The previous two perspectives can be discussed jointly, since both of them fall into the same category. And the latter two dimensions are closely related, thus, they will also be analyzed together.

Tying, bundling, self-preferencing and app stores

First, tying and bundling and other related practices, such as pre-installed apps, are common ways the platforms applied to increase the participants of the uses and limit their abilities in choosing alternatives. For tying and bundling, the DMA has obligations, such as 5e "*No tying to business users from CPS to ID services*" and 5f "N*o tying from CPS to other CPS*", directly prohibit these anti-competitive behaviors, which are valuable because these obligations **limit leverage between CPS activities**, where gatekeepers already have gateway power. Although these obligations are clear and direct, they may be **unduly narrowly drawn** and thus **limited in their effectiveness**[175]. Taking 5e as an example, for now, it seems will be applicable for the intermediation services, however, it might influence the social log-in services. In fact, business users may still have an incentive to offer popular social log-in services, for instance providing the alternative to users "login with Facebook", because this potentially widens their user base. Additionally, the end-user might prefer the gatekeeper ID service, because they do not have to use additional passwords and third-party sites are less trustworthy. Thus, the Commission might need to provide a **more clear definition to bound** the scope of the

[175] See A. de. Streel, R. Feasey, J.Kramer, G. Monti, "Obligations and prohibitions", issue paper, CERRE, May 2021, p.19.

application or line these obligations under Art. 6 to provide **more guidelines** on the application scope case by case.

Moreover, platforms are rarely pure intermediaries that leave all production of goods and services to external or third parties. This leads to the other problem, which is similar to tying and bundling, namely, **self-preferencing**. Such kinds of conductions can harm the competition, because if the platforms keep favoring their own subsidiaries, it might reduce the **consumer welfare**[176]. Acknowledging from other competition law cases, this is similar to telecommunication world competition, where the distortions in competition are caused by partial vertical integration. And Art. 6 proposes a number of **ex-ante remedies**[177] to address self-preferencing and complement the traditional competition law[178]. It has been revealed that the ex-post complain regulations in EU competition law are not too efficient, while applying on online platforms because the dominant position itself is the problem[179]. In the DMA, it takes a **proactive approach** to this problem and allow the business users to complain against unfair treatment[180].

Regarding app stores, they generate value by providing a venue where supply and demand can meet to transact. However, the dominant firms can charge or manage the price especially in capturing the **aftermarket revenues** such as renewal fees and **lock-in** the consumers[181]. The Commission takes two different approaches, on one hand, it tries to **disintermediate** and **decrease the reliance** of business users on gatekeepers. For instance, the 5b and 5c[182] allow the disintermediation between the business users and gatekeepers. Therefore, the business users are **more independent** and have **more direct access to the end-users.** On the other hand, the DMA tries to address the lock-in concerns directly. Taking the 6c as an example which forces the gatekeepers to allow side-loading of apps from alternative app stores. It is the most far-reaching obligation, because it still allows certain control to the gatekeepers, but forces them to **remove the gateway** for the business users and it seems

[176] Traditional competition law principle in focusing on theory of harm and consumer welfare.

[177] For instance, 6.1 d: No self- preferencing in rankings.

[178] Competition law has ex-post regulations that include specific provisions for third parties to complain against unequal or unfair treatment.

[179] See section 5.1.

[180] See 5d: "No prevention of raising issues with public authorities".

[181] L.Cabral, J. Haucap, G.Parker, G.Petropoulos, T.Valletti& M. van. Alstyne, "The EU digital markets act: a report from a panel of economic experts" Publications Office, 2021, p.3

[182] Art. 5b that allows business users to promote offers to end users outside the core platform service & Art. 5c that allows end users to access content, subscriptions and other features through other channels than the core platform services of the gatekeeper.

applicable through three steps or ways: **a)** allowing the installation of third-party application in the gatekeeper app store; **b)** including third-party application stores; and **c)** allowing access to these apps through other channels than those provided by the gatekeepers[183].

Overall, the obligations under DMA in addressing the above issues can be concluded as **disintermediation**. In other words, it forces the gatekeepers to move their gateway powers and give the business users more opportunities and independencies. Furthermore, by having the ex-ante approach, the business users have more flexibility in making the business choices, and they can reach the end-users more directly.

Advertising and data-sharing

Advertising is one of the main sources of income for online platforms. The UK's competition and Markets Authority (CMA) has conducted a study on digital adverting[184]. According to the study, two important points have been revealed: First, unlike traditional advertisements, online platforms' advertising is **target advertisements** that highly rely on the data during this process[185] and large platforms have the power to acquire huge market shares. Second, the digital advertising market **lacks transparency** which means the platforms do not share the information and advertisers receive limited information on readers of the advertisements. The proposed principles from CMA's study are largely overlapped with the DMA's obligations[186]. The main difference is that the CMA's proposed principles are specifically targeted only one CPS: advertising markets and conducted within the firm level, while the DMA covers broader perspective: the obligations cover numbers of gatekeepers with more CPS.

As discussed before, online platforms would like to accumulate as much data as possible because the more information they have, the better they can be in targeting advertisements. The CMA has pointed out the importance of noticing the possible concentration of economic power inheriting from data combination. In the acquisition of WhatsApp of Facebook's case, the Commission notes that "*Facebook's market shares are equal to 20-30% in a number of Member States in a* ***potential market***

[183] L.Cabral, J. Haucap, G.Parker, G.Petropoulos, T.Valletti& M. van. Alstyne, "The EU digital markets act: a report from a panel of economic experts" Publications Office, 2021, p.18

[184] Final report: https://assets.publishing.service.gov.uk/media/5fa557668fa8f5788db46efc/Final_report_Digital_ALT_TEXT.pdf.

[185] It has been discussed in previous section. See section 4.4 Large online platforms' competition.

[186] See Appendix E: the comparation between CMA's codes and DMA obligations.

for overall online advertising"[187]. The 5a under the DMA emphasizes the refrain combination of different sources of data and the data fusion can only happen with user consent. Although it is a good approach in addressing the **structural problems** of the platforms' competition and limit the large data accumulation and utilization by gatekeepers, there are several **practical or supervision issues**. First, similar to the GDPR's rules about the cookies[188], consumers might press accept even while they have not realized what they have agreed on. Second, a key clarity question will be what constitutes active consent for this obligation and how to assess whether consent choice architecture is appropriate. Moreover, in practice, it is not easy for the authorities to assess whether the gatekeepers have shared the data across services with or without the contravention of consumer consent.

Secondly, the large online platforms would like to **control the data** and hold it as the **barging power** to the advertisers. Accordingly, they will not leak the information to the advertisers or other business users. This opacity is almost by design and could be in itself a manifestation of **abuse of market power**. It also can be considered as the **strategic entry barrier** that the large firms set for their competitors, especially through the use of defaults. CMA has laid out that **network effects and path dependency** might lead to market power and high prices, which are related to the competition concerns and theories of harm. Because when the advertisers have **intensive price competition**, they would need otherwise paid for advertising their products and result in the consumers might have to pay more. In short, the price that advertisers raised and paid to the platforms will be **passed on to the consumers** who bought the final products. The obligations within the DMA are forcing the gatekeepers to be **more transparent** to the advertisers or business users. For example, 5g requires the gatekeepers to have price transparency for ads. In this way, the advertisers will receive more information regarding the users, and the information will be **less asymmetric** between gatekeepers and advertisers. Thus, it decreases price discrimination and **eases the intensive price competition** on the advertisers' side. Additionally, 6.1g mandates the provision of ad performance measuring tools which means the gatekeepers have to move the barriers in **giving more chances to their rivals** in proving their attributions for the ads.

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[187] See para 171 of 2014 decision. Case M.7217 – Facebook/ WhatsApp.

[188] See what are the cookies under GDPR. https://gdpr.eu/cookies/, accessed 09.09.2021.

Overall, several points need to be concluded about the **data-related provisions** under the DMA, and advertisers can be taken as the representatives for the discussion. In short, DMA is more directly targeting the **structural issues**[189] within the online platforms competition which is the problems regarding the **data**. Online platforms consider data as an essential and crucial asset, especially large firms, they would like to benefit from the network effects and thus they would like to have **control of data collected by them**. They hold the data as the bargaining power to the advertisers or business users and create entry barriers to the rivals.

In addressing these problems, the DMA imposes the **data sharing obligations** on the gatekeepers to reduce their exclusive control on the data and require them to give more business opportunities to the other users. For the advertisers, due to the **asymmetric information and reliance relationship** between advertisers and gatekeepers, there is usually intensive price competition on the advertisers' side where ultimately, the consumers might harm and pay for the raised price. DMA forces the gatekeepers to have more transparency and give more information to the advertisers in order to ease the price competition.

For the business users, the DMA trying to address the **discrimination problems** and give business users **more chances to innovate** or decrease their reliance on gatekeeper platforms. Taking 6.1a as an example, gatekeepers are not allowed to use the data related to business users to compete against them, unless these data are open resources[190]. These obligations prevent the gatekeepers from being a free-rider and limit their abilities to conduct **vertical integration**. There is a risk that these obligations might weaken the positive network effects because gatekeepers accumulate a certain number of data and have better chances to maximize the value of the data.

5.5 Assessment and comments on DMA

Making a good policy requires the following elements[191]. First, the goals and objectives are supposed to be clear. Second, specific regulatory elements are needed. Third, the policy should be enforceable,

[189] Structural competition problems are those which relate to market characteristics that may have an adverse effect on competition or result in inefficient market outcomes, such as higher prices, lower quality, less choice and innovation.

[190] The original text "Publicly available".

[191] See C.Knill & J.Tosun "Public policy: A new introduction".

and relevant toolkits should be selected to enforce the objectives. Lastly, the effectiveness needs to be evaluated. This section will assess the DMA from these perspectives, and since it is still a draft, the enforcement effectiveness cannot be examined, still, several comments or predictions will be made based on reviewing multiple stakeholders' opinions.

First, the most important objectives of the DMA are **contestability and fairness** of digital markets[192]. DMA is a competition tool in complementing the EU competition law. From previous antitrust experience, the Commission recognizes that the large online platforms have several anti-competitive behaviors or significant market power that needs to be noticed and regulated. Moreover, the traditional competition law usually applies ex-post rules, which cannot adapt to the dynamic competitive environment for the digital economy. Thus, the DMA specifically targets the 'Gatekeepers' who are providing CPS and proposes an ex-ante regime, including several obligations and prohibitions, on these gatekeepers. This **proactive and targeted approach** seems to be a good start because the DMA is actually not only complementary to the EU competition law, it is also interacting with other legislation. For instance with its sister act DSA to reshape the digital economy to be more responsible and some rules within DMA are similar to the other digital policies[193]. Hence, the DMA is consistent with the EU's plan in reshaping the policies for the digital sectors.

Second, there are some commons about the designation of gatekeepers along with the proposed obligations and prohibitions. Foremost, the definition for the 'gatekeeper' is clear, and the application scope has been drawn on the eight CPS. Although the scope of the CPS is debatable[194], it is efficient to have a **clear** definition because it allows the enforcement to be more targeted and concentrated. For the designation of a gatekeeper, the three selection criteria have provided both quantitative and qualitative assessments. The number of potential identified gatekeepers will be 10 to 15, which seems an appropriate standard. Using the CPS and gatekeeper designation to identify which firm needs to be regulated is clear and direct. From an enforcement perspective, it gives the Commission certain

[192] See Recital 79 of DMA: "The objective of this Regulation is to ensure a contestable and fair digital sector in general and core platform services in particular, with a view to promoting innovation, high quality of digital products and services, fair and competitive prices, as well as a high quality and choice for end users in the digital sector."

[193] For example, the Art. 6.1h is about data portability which is one-step further than GDPR because it focus the data generated both from consumers and business users.

[194] Within EU, there are some voices in suggesting to have a general definition for the CPS and the others are asking for a clearer definition for each CPS.

flexibility but also limits the number in a **controlled amount,** because DMA intends to work efficiently and the market investigation or monitoring system might be less productive if there are too many gatekeepers.

For the obligations and prohibitions, even though the line between the Art. 5 and Art. 6 is **not clear enough**[195] and some terms need to be refined during the legislative process, having these rules can help different stakeholders understand **what contestability and fairness meant** by the Commission. Because even if everyone agrees that there is need to create a fair and contestable digital market, there is no common standard on evaluating these two concepts. With the obligations under DMA, the standard has been shaped and what a fair and contestable market is supposed to be has been explained to a certain degree. In addition, these obligations and prohibitions are designed with an ex-ante approach, which gives the regulators some leeway in adjusting rules in a certain time, and thus, they are **more flexible** and likely more efficient.

Third, an appropriate tool needs to be chosen in order to measure the problems. To be more specific, the rules and remedies need to be matched in light of the objectives pursued. As discussed, the ex-ante approach is a right start. However, the regulatory tools need to be appropriate selected or specified. For instance, tool which has been described in Art. 17[196] is too complex and it will decrease the efficiency. For the enforcement, it is clear and necessary to let the **Commission be the main regulatory body**. Because the Commission can take a broader perspective, and these services are multi-homing, which means they are hard to be controlled within the national level. Even though enforcement is still not clear at this moment, it seems **certain incentives** need to be created in order to motivate the gatekeepers to comply with the rules and strictly follow these obligations.

In short, the DMA tackles large platforms and adopts an ex-ante regime, which seems to be a **good start**. Although the obligations or some other rules give leeway to the regulators, these rules need **more clarity**. Therefore, some terms or rules might be refined during the legislative process.

[195] Some terms in Art.5 seems need further guidelines, etc.

[196] See Art. 17 “Market investigation into new services and new practices”.

6. Integrated analysis

This chapter consists of two parts. The first part seeks to answer the economic sub-question and then discuss how DMA influences Facebook's competition and innovation. The second part aims to answer the legal sub-question and discuss how does DMA influence online platforms' competition. While answering the first question, it also provides solutions for the second question from a micro-level. Thus, these two parts of analysis are naturally combined.

6.1 DMA's influence on Facebook's innovation

The social networking service is the core service Facebook is providing. Although it has several rivals Facebook faces in the social networking platform market, the competition is not intensive because their products are differentiated. However, in the digital advertising market, Facebook has intensive and direct competition with other **large platforms** that provide different types of services. The currency and the value they hold is the **data**, and thus, their business strategies are designed to acquire as much data as possible. The one who accumulated more data might have the ability to perform better in conducting **targeted advertising**, which means more attractive to the advertisers.

Two motivations drive Facebook to innovate: maintain their position and fear of being replaced. Facebook's business model is highly reliant on the **network effects**, thus, they will keep **expanding** in acquiring more users. One of the ways they are expanding is conducting **vertical integration** to create the digital **ecosystem** by itself, namely, **mega-app**. If Facebook can successfully build up the mega-app, it will have full control over the data, since all the products and services are provided by itself, it wants to build the mega-app because of the **fear of the disruptor**. Disruptive innovation usually happens on low-markets or new-markets. If Facebook can build the mega-app, it can **fulfill most of the segments** and meet different types of users' needs and attract these users to be active on the platform.

To be brief in answering the **economic sub-question**, Facebook is competing with other large platforms. They are competing on the data, and *for* the market rather than *on* the market. To be more specific, they are competing on their ability to acquire, accumulate and utilize the data to conduct targeted advertising. Therefore, Facebook will conduct both product innovation and process

innovation. Conducting vertical integration to have more products or services and fill in the overlooked segments and expand its market. Its ultimate goal is to build a mega-app and create the ecosystem of itself in order to have full control over all the data.

Before discussing the DMA's influence on Facebook's innovation. There are several other challenges or risks Facebook needs to overcome or notice in building the mega-app and worth to be pointed out. Since it is not within the scope of this research, it will just be mentioned briefly and without detailed explanations. **First,** from a global and political perspective, they have been involved in several antitrust investigations both within the US and several EU member states. And it is also facing other investigations such as taxation and data privacy. In the near future, it might have to spend more resources in dealing with these problems. **Second,** the social awareness of data privacy issues, Facebook's reputation has been significantly influenced due to the data breach scandal. More and more people have started to realize data privacy issues. Building the mega-app will ask the users to provide more data regarding themselves, and the users might not be willing to give full consent. **Last but not least,** the technological breakthrough is not easy, especially in building the mega-app. It requires all-in-one technology, and Facebook has to cooperate with different actors or lobby local governments if they want to include the payment services into the mega-app.

Then now we can discuss DMA's influence on Facebook, especially on its innovation. According to Facebook's turnover and size, and its market influence, it seems Facebook will be designated as a gatekeeper at least on its social networking services. It will have to comply with the obligations and prohibitions. Although these obligations might be modified to a certain degree after the legislative process, it seems the DMA will influence Facebook from the following perspectives. **First**, DMA will have a significant influence on Facebook's targeted advertising. These obligations require Facebook to have more transparency to its advertisers, and thus, it will ease the intensive price competition on the advertisers' side. On one hand, it decreases Facebook's ability to control the data and weakens its advantages. While on the other hand, it might force Facebook to find a way to increase other types of income. For instance, it might motivate Facebook to accelerate its speed to build the mega-app to have a stable way to maintain its position and perform better than its rivals in

occupying larger number and better quality of data[197]. **Second**, obligations such as 5a about the data combination will directly influence Facebook's ability to combine different sources of data, thus, it also influences its innovation directly where highly depends on data integration. **Last**, Facebook needs to share more data with its business users. Therefore the business users will have more ability to connect to the end-users directly and have more business opportunities. It will not influence Facebook's innovation too much, because these obligations are designed to give more chances to the business. However, Facebook is exposed itself to increasing risks and will have more rivals because disruptors might rise from these business users.

Concluding in short, the DMA will limit Facebook's ability to build the mega-app to a certain degree. However, more competition pressure has been laid on it, this might accelerate its speed in innovating.

6.2 DMA's influence on online platforms' competition

Departing from the firm level, this section will view the online platform's competition from a broader perspective. It will discuss DMA's impact on different actors and then combine these views to provide a more comprehensive discussion in the last chapter to answer the research question.

Large online platforms

Since the main regulatory objectives are the gatekeepers, the large online platforms that provide the CPS will mostly be influenced under the DMA. Taking Facebook as a representative, how the DMA will influence its competition and innovation has been revealed in the previous sections. In short, DMA is forcing the large online platforms to **decrease their control on data** and take a **proactive approach** in preventing these firms from abusing their market power. It **does not influence the way these large online platforms compete**. These gatekeepers will still try to control the data as much as possible and expand themselves to exploit the network effects' power, which means they probably will only comply with the new rules at a **minimum**. The DMA will influence the gatekeepers' innovation to a certain degree, but it is not too destructive. In turn, it creates **some threats** and the competition pressure to motivate them to accelerate their innovation process.

[197] More users and more active users which means better quantity and quality of data.

SMEs

For the SMEs who provide **third-party services on large platforms** and rely on large platforms, DMA will have a significant influence on them. DMA moves several barriers for them, it allows these business users to have more information, more chances to utilize the data, and disintermediate them with the gatekeepers to a certain degree. In short, a more **fair and contestable business environment** will be created. Thus, they will be more independent and more directly connected with the end-users, giving them more **flexibility and business opportunities**. However, this also means their competition will be **increasingly intensive**. Moreover, one of the limitations is that these SMEs **might want to rely on** large platforms to benefit from the network effects. Since the competitive pressure will be increased, it will motivate them to innovate because if it does not innovate, its rivals will.

The other group of SMEs is the pure innovators who are **eager to create disruptive innovation and not depend on** large online platforms. DMA **does not have significant influence** on these innovators. It might create certain competition pressure on them, since there is certain competition among the SMEs, no matter what type of services they are providing or whether they are dependent. DMA does not influence these innovators' innovation process, because although data-sharing obligations allow data portability, it is hard for the innovators to achieve the information and there are no obligations for the large platforms to share data with their potential competitors. Thus, the disruptors are on themselves in creating innovation and collecting information.

Advertisers

The DMA will influence the advertisers' competition **directly,** reflecting on the price they paid. Since DMA require the gatekeepers to have more **transparency** on the advertisement, it **decreases the asymmetric information** between the advertisers and the gatekeepers. Accordingly, the intensive price competition on the advertisers' side will be relieved to a certain degree. The advertisers also have **more choices**. However, the advertisers are still relying on large platforms because they do not have the ability to conduct targeted advertising. The platforms have better algorithm and accumulated more data which means the value can be maximized by them rather than the advertisers[198] or other

[198] As discussed, the value of data might be appear within its context.

less influential platforms.

End users

Although the DMA has nothing relevant to the consumers, it has several indirect influences on the consumers. Because the DMA is designed based on economic facts and follows several basic competition law principles, it addresses the theories of harm and focuses on consumer welfare to a certain degree. To be brief, these end-users will only be influenced indirectly. For example, they might have a less smooth user experience in some scenarios, such as they might need extra accounts when third parties provide their own log-in channel.

7. Conclusion

This paper consists of two parts of studies, from the economic and the legal perspectives, to discuss the DMA's influence on online platforms' competition. At the same time, as a supplement to the research, it analyzes whether the DMA will motivate or stifle online platforms' innovation.

The economic analysis results have been revealed through a case study and a strategic approach, where Facebook's competitive position and business plans have been discussed. In short, as a large tech firm, Facebook is mainly providing social networking services and its main revenue is generated through targeted advertising. Thus, it needs to acquire as much data as possible and benefits from the network effects. The most direct and efficient way to attract new users and maintain its market position is to expand the market and include various products to fill in the overlooked segments. It is also a way to prevent itself from being replaced by the disruptive innovators. Moreover, it is not motivated to move away from such a business model due to its multi-sidedness, it has to exploit one side to attract the other side. Therefore, it is trying to innovate and build the ecosystem of itself to have more flexibility and maintain its dominant position.

Similarly, all the platforms are relied on the data and try to enlarge the network effects. Therefore, even they will take different approaches, their goals are the same as Facebook, which is acquiring as much market share as possible and having control of the data. Aiming so, they will set different barriers to their potential rivals in order to maintain their competitiveness and these behaviors might

shape an unfair market environment.

To regulate these large tech companies and create a more contestable and fair market for the platforms, the European Commission proposed the new legislation, which is the DMA. It takes a new approach to regulate the digital economy. By tackling the large tech companies who provide the core platform services and adopting the ex-ante regime to prevent the potential competition issues, the DMA seems to be a promising and far-reaching proposal. It will serve as a complement to the EU competition law. While the traditional competition law, with ex-post regulations, cannot adapt to the dynamic competition of the digital economy, and several basic principles, such as abuse of the dominant power, have been challenged. The DMA takes a proactive approach in imposing several obligations on the "gatekeepers" in forcing them to provide more transparency to the advertisers, to share more data with its business users and give more opportunities to the other SMEs. In short, the DMA influences the online platforms' competition by removing certain barriers, which set by the gatekeeper to its business users, and decrease its power in controlling the data and creating gateways to the other firms. In addition, the DMA creates certain pressure to all the platforms and motivate them to innovate.

Last but not least, there are several recommendations for further research directions. First, further research can focus on the DMA's enforcement and effectiveness. Second, they can discuss the DMA's interaction with other legislation such as DSA or GDPR. Third, to discuss from a global perspective in comparing with, for instance, the UK's CMA and the US antitrust investigations will also be a good option.

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Appendix

Appendix A

Some examples of the *"do's"* and *"don'ts"*[199] include:

Do's	Don'ts
There will be specific situations in which gatekeepers need to allow third parties to inter-operate with the gatekeeper's own services.	Gatekeepers may no longer prevent users from un-installing any pre-software or app if they wish so.
Gatekeepers need to provide companies advertising on their platforms with the tools and information necessary for advertisers and publishers to carry out their own independent verification of their advertisements hosted by the gatekeeper.	Gatekeepers may no longer treat services and products offered by the gatekeeper itself more favourably in ranking than similar services or products offered by third parties on the gatekeeper's platform.
Gatekeepers need to allow their business users to promote their offer and conclude contracts with their customers outside the gatekeeper's platform.	Gatekeepers may not use data obtained from their business users to compete with these business users.
Gatekeepers need to provide their business users with access to the data generated by their activities on the gatekeeper's platform.	Gatekeepers may not restrict their users from accessing services that they may have acquired outside of the gatekeeper platform.

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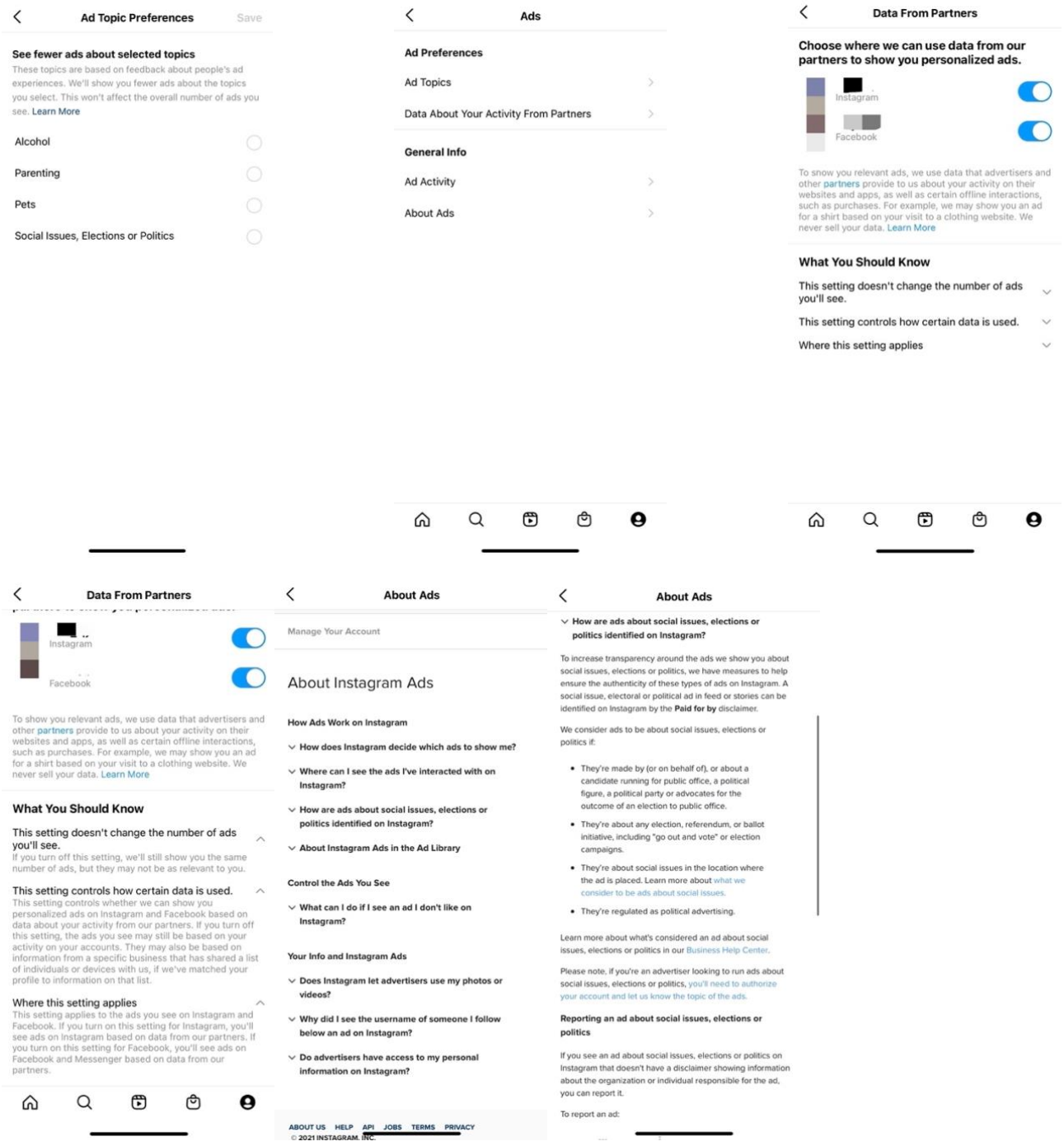
Appendix B

Ads topic preference; Own settings; Permit to combine Facebook and Instagram data; Information about the Ads; Sensitive topics: political, etc.



Appendix C

Article 3 Designation of 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.

Appendix D

Obligations and prohibitions

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.

Appendix E

Comparation of proposed principles from CMA's online platforms and digital advertising market study with the draft of DMA obligations:

	Proposed principles from CMA Dig. Ad. market study	Draft DMA Obligations
Restrictions on platform use	• Not to impose *undue restrictions* on ability of customers to use other providers that compete with the SMS platform or to compete with SMS platform themselves (OC1) • Not to *unreasonably* **restrict** how customers can use platform services (FT3)	• No M**FN/parity clauses** (5.b) • No **anti-steering** (5.c) • Allow '**side loading**' of third party apps or app stores, unless threatens integrity (6.1c) • Allow **un-installing of apps**, unless essential to OS/device (6.1b)
Self-preferencing	• Not to influence competitive processes or outcomes in a way that *unduly* **self-preferences** a platform's own services over those of rivals (OC2)	• No **self-preferencing** in rankings (6.1d)
Bundling/tying	• Not to **bundle services** in market where the SMS platform has market power with other services in a way which has an *adverse effect* on users (OC3)	• No **tying** from CPS to ID services (5.e) • No **tying** from CPS to other CPS (5.f)
Interoperability	• To take reasonable steps to ensure that core services **interoperate** with third party technologies where not doing so would have an *adverse effect* on users (OC4 • **Not to withhold, withdraw, or deprecate APIs** or otherwise change them in a way which has an *adverse effect* on users (OC5) • DMU to have ability to mandate **interoperability** (PCI)	• No **technical restriction of switching or multi-homing** across apps using OS (6.1e) • **Access and interoperability** for business users and ancillary services to OS should be as for proprietary ancillary services (6.1f)
Ad transparency	• To **comply with industry standards** and provide **access to relevant data** required for third-party verification and measurement • To be **transparent** about **fees** charged	• **Price transparency** for ads (5.g) • **Performance transparency** for ads (6.1g)
Fair conduct	• To trade on **fair and reasonable contractual terms** (FT1) • Not to apply *unduly* **discriminatory terms**, conditions or policies to certain customers (FT2)	• No **prevention of complaints** to public authorities (5.d) • **FRAND access to app stores** (6.1k)
Data use	• To require **use of data** from customers only in ways which are *reasonably* **linked to the provision of services** to those customers (FT5)	• No **data fusion** without user consent (5.a) • No **use of data related to business users** to compete against them (6.1a)
Data access/ portability	• DMU to have ability to mandate real-time **data portability** (PCI) • DMU to have ability to mandate **access to query and click data** (PCI)	• Provide real-time **data portability for business- and end-users**(6.1h/i) • Data sharing obligation: **FRAND access to query and click data** (6.1j)