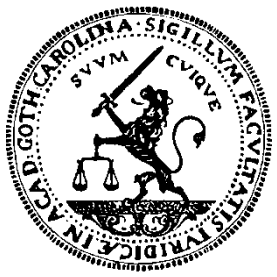

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Competition in EU Digital Markets

JAEM03 Master Thesis

European Business Law
30 higher education credits

Supervisor: Anna Tzanaki

Term: Spring 2022

Contents

Abstract

The features of digital markets constitute entry barriers and facilitate large platforms to adopt strategic behavior. Large platforms benefit from these features, making it hard for new market players to enter their markets or compete. Besides, large platforms can employ strategies to foreclose competition based on the characteristics of digital markets, leading to large platforms holding dominance positions or the abuse of dominance as the competition issue in EU digital markets. Against this background, methodological and substantive gaps exist while applying Art.102 TFEU. Establishing dominance is difficult under the current legal framework. The ongoing tools are not sufficient to measure market power because of the unique features of digital markets. Even if the European Commission can establish a dominant position on the undertaking, Art.102 TFEU does not sanction the firm without specific conduct. Besides, despite Art. 102 TFEU can capture strategies by large platforms as abusive conduct; it intervenes too late in EU digital markets because it operates ex post.

Introducing an ex ante regulation such as Digital Markets Act could be helpful in governing specific conduct by large platforms and reduce the negative effects of the features in EU digital markets. The proposed Digital Markets Act imposes ex ante obligations on the anticompetitive behavior of large platforms. It can substantively complement the competition law by its design of gatekeepers, the obligations of gatekeepers, and the European Commission's power of oversight or enforcement. However, the proposed Digital Markets Act aims to ensure contestable and fair markets in the digital sector instead of providing competition that is not distorted in the internal market. This objective of the proposed Digital Markets Act is unclear within EU law. If legislators can introduce better guidance based on principles to interpret how to reach its legal interests, it may help the proper enforcement of imposing the obligations.

Abbreviations

AI	Artificial Intelligence
API	Application Programming Interface
Article 102 TFEU Guidance	Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings [2009] OJ C 45/02
CJ	Court of Justice
CJEU	Court of Justice of the European Union
CPS	Core Platform Services
DMA	Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act), [2020] 842 final
DSA	Digital Services Act
EC	European Commission
EFD	Essential Facilities Doctrine
EU	European Union
EUMR	Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings (the EC Merger Regulation) [2004] OJ L 24/1
GC	General Court
GDPR	Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC

	(General Data Protection Regulation) [2016] OJ L 119/1
Impact Assessment Report	Commission staff working document impact assessment report accompanying the document Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act), SWD(2020) 363 final.
MFN clauses	Most Favoured Nation Clauses
NCA	National Competition Authorities
NCT	New Competition Tool
OECD	Organisation for Economic Co-operation and Development
OS	Operating System
P2B regulation	Regulation (EU) 2019/1150 of the European Parliament and of the Council of 20 June 2019 on promoting fairness and transparency for business users of online intermediation services[2019] OJ L 186/57
Relevant Market Notice	Commission Notice on the definition of relevant market for the purposes of Community competition law [1997] OJ C 372/03
SIEC test	Significant impact on the effective competition test
SSNDQ test	Small but significant non-transitory decrease in quality test
SSNIP test	Small but significant non-transitory increase in price test
TEU	Treaty on European Union.
TFEU	Treaty on the Functioning of the European Union

1 Introduction

1.1 Background

With the development of technology, the business model has also changed. In recent years, most business activities have flourished on digital platforms. We can buy a wide range of products and services through online platforms. Especially during the COVID-19 pandemic, there was a trend toward digitalizing business activities. In addition to the trading side, search engines and social networks have become an integral part of people's online activities: Almost everything depends on the existence of the digital platform.

However, many competition problems have arisen in the world of digital markets. The big, well-known tech companies are GAFAM- Google (Alphabet), Apple, Facebook (Meta), Amazon, and Microsoft, with solid databases and dominant digital economy positions. For instance, Google has used its advantage to put its products at the top of the search engine results, crowding out other competitors' product exposure.[1] Amazon leverages its dominance in the e-book market by requiring its publishers to reveal the terms of contracts with Amazon's competitors to adjust e-book prices and release dates in the e-book market and acquire more advantages.[2] Besides, mergers between the platforms also touched on the competition issues, which enlarged the market power, such as Facebook and WhatsApp. Such cases reflect the competition problems that cannot be tackled or addressed effectively under the EU competition rules.

On 2 June 2020, the EC held a public consultation and published an initial impact assessment on the New Competition Tool (NCT), which aimed against the distortion of competition in the digital economy. The NCT was based on the structural competition problems: (I) structural risks for competition, including certain market characteristics such as network effects, lack of multi-

[1] *Google Search (Shopping)* (AT.39740) [2017] C(2017) 4444 final.
[2] *E-book MFNs and related matters* (AT.40153) [2017] C(2017) 2876 final.

homing, and lock-in effects. (II) structural lack of competition concerning markets are not working well because of strong concentration, high barriers to entry, consumer lock-in, lack of data or data accumulation, and the oligopolistic market with tacit collusion.[3] The NCT was designed as a remedy for the gaps left by Articles 101 and 102 TFEU or merger control which cannot address these structural competition problems.

In such circumstances, the EC proposed the Digital Markets Act (DMA), which tries to deal with some issues arising from the digital economy in December 2020. At the same time, the Digital Service Act (DSA) was also proposed as part of the digital strategy of the EU, aiming to 'create a safe digital space for users and establish a level playing field to facilitate a competitive environment.'[4]

The DMA draft was approved by the European Parliament in December 2021, and the Parliament negotiated with the Council.[5] As of today, the Parliament and Council reached a political agreement on the legislation on 24 March 2022.[6] Once the DMA is passed, it will apply to the big tech firms which are considered as 'Gatekeeper' that provides 'Core platform service' such as intermediation services, search engines, social networking services, operating

[3] EC, 'Single market – new complementray tool to strengthen competition enforcement'- Inception impact assessment (NCT), 2 <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12416-Single-Market-new-complementary-tool-to-strengthen-competition-enforcement_en>accessed 20 May 2022

[4] EC, 'Communication from The Commission to the European Parliament, The Council, The European Economic and Social Committee and the Committee of the Regions Shaping Europe's digital future' COM(2020) 67 final, 3.

[5] European Parliament, 'Digital Markets Act: Parliament ready to start negotiations with Council'(15 December 2021) <https://www.europarl.europa.eu/news/en/press-room/20211210IPR19211/digital-markets-act-parliament-ready-to-start-negotiations-with-council> accessed 22 March 2022

[6] European Parliament, 'Deal on Digital Markets Act: EU rules to ensure fair competition and more choice for users'(24 March 2022) https://www.europarl.europa.eu/news/en/press-room/20220315IPR25504/deal-on-digital-markets-act-ensuring-fair-competition-and-more-choice-for-users accessed 10 April 2022

systems, etc. The DMA lists 18 obligations and prohibitions for the gatekeepers to comply with to govern their anticompetitive conduct.[7]

The DMA is described as ex ante rules for competition by the EC. Before EU legislation, in Germany, the imposition of the Digital Competition Act has amended the Competition Act (Gesetz gegen Wettbewerbsbeschränkungen, GWB), which expanded the investigative powers of Germany's competition authority on the abuse of market power and changed the turnover thresholds of mergers.[8] Notably, the United States also introduced five bills that plan to restrain the market power of big techs.[9] The importance of digital markets in the field of competition is emerging in terms of the state of legislation in various countries.

1.2 Aim and Research Questions

The Assessment Report on DMA mentions that powerful platforms benefit significantly from the entry barriers and have entrenched market positions to abuse their market power; market failures occur since the market cannot self-correct, especially with high entry barriers making new entrants cannot compete with incumbents. Current competition law cannot address these problems because it operates ex post; the EC and EU courts spent a lot of time and resources dealing with cases in digital markets. A new regulation is needed to intervene ex ante and prevent anticompetitive conduct by large platforms: The nature of DMA is to complement competition law. Besides, its objective is different from EU competition law. Generally, the EU

[7] Art. 2 DMA; Pierre Larouche and Alexandre de Streel 'The European Digital Markets Act: A Revolution Grounded on Traditions' (2021) 12(7)Journal of European Competition Law & Practice, 542.
[8] The Library of Congress, 'Germany: New Digital Competition Act Expands Abilities of Competition Authorities to Regulate Abuse of Dominant Market Positions' (23 Feb 2021) <https://www.loc.gov/item/global-legal-monitor/2021-02-23/germany-new-digital-competition-act-expands-abilities-of-competition-authorities-to-regulate-abuse-of-dominant-market-positions/> accessed 15 March 2022.
[9] Cody Godwin, 'US lawmakers introduce bills targeting Big Tech' (BBC News, 12 June 2021) <https://www.bbc.com/news/technology-57450345> accessed 15 March 2022. Also see Geradin Damien and Dimitrios Katsifis 'Strengthening effective antitrust enforcement in digital platform markets' (2021) European Competition Journal.1.5 <DOI:10.1080/17441056.2021.2002589> accessed 1May 2022

competition law ensures competition is not distorted in the internal market. However, the DMA aims to provide 'contestable and fair markets in the digital sector' rather than pursue the same goals of competition law.[10] The purpose of the thesis is to appraise whether the DMA will substantively complement the EU competition law and reach its objective in digital markets.

To achieve the purpose, the following research questions will be answered:

1. What are the features of digital markets and strategies adopted by large, powerful platforms that create entry barriers and give rise to competition problems?
2. Does existing competition law sufficient or well suited to address the features of digital markets and the conduct of digital platforms?
3. How will the proposed Digital Markets Act complement EU competition law as well as tackle any anticompetitive behavior of digital platforms or special features of digital markets?

1.3 Method and Materials

The thesis mainly uses the legal dogmatic(doctrinal) method to answer the questions outlined in this paper. A systematic interpretation is needed to rationalize and stabilize the complications in the case law. Further, the definition of concepts and classification of cases and rules are required while describing a new system of law or organizing existing law based on new principles.[11]

Besides, different from legal doctrinal research adopts a narrow view (internal perspective) of the law, legal science as a socio-legal study adopts a broader perspective, including historical studies, sociological research, philosophy,

[10] Art.1(1) DMA
[11] Jan M. Smits, 'What is Legal Doctrine? On the Aims and Methods of Legal-Dogmatic Research'(2015) in Rob van Gestel, Hans-W Micklitz, and Edward L. Rubin, *Rethinking Legal Scholarship A Transatlantic Dialogue* (Cambridge University Press 2017) 8-10 <https://ssrn.com/abstract=2644088> accessed 29 March.

political theory, and economy. [12] Drawing upon the legal science, the terms in economics literature will be used in some parts of the thesis to explain the features of digital markets and strategies adopted by large platforms.

The materials used are mainly from EU legal sources, the proposed legislation by the EC, and relating official documents, including the Impact Assessment Report and 2019 report for the EC 'Competition Policy for the digital era' (Report on Competition Policy for the digital era)[13] To explain the various problems that have arisen from digital markets in the past, the decisions by the EC and case law by the EU Courts will be used as well.

1.4 Delimitations

Firstly, DSA will not be discussed in this thesis, although it is also important to discuss how to establish a framework of transparency and accountability for online platforms to protect consumers' fundamental rights.[14] The proposed DSA is closer to the field of safeguarding end-users directly. However, this thesis will focus on the competition between large platforms and business users in the digital market.

Secondly, following the discourse of the Impact Assessment Report, the competition problems are unfair gatekeeper practices and weak contestability in platform markets which arise from the entry barriers to the large platforms' market and imbalanced bargaining power between large platforms and their business users. There could be a broad definition of competition problems in digital markets. I should narrow the description here. This thesis mainly focuses on what features of digital markets caused high entry barriers and

[12] Pauline C. Westerman, 'Open or Autonomous: The Debate on Legal Methodology as a Reflection of the Debate on Law' (2009) <https://ssrn.com/abstract=1609575>accessed 29 March.
[13] Jacques Crémer,Yves-Alexandre de Montjoye, Heike Schweitzer, 'Competition Policy for the digital era-Final report' (2019) European Commission
[14] EC, 'The Digital Services Act: ensuring a safe and accountable online environment' < https://ec.europa.eu/info/digital-services-act-ensuring-safe-and-accountable-online-environment_en> accessed 29 March, 2022

facilitated large platforms to adopt strategic behavior, leading to the dominance of large platforms or the abuse of dominance as the competition problem in EU digital markets from the view of the law.

Thirdly, regarding the potential gaps while applying competition law to digital markets. The thesis mainly focuses on the large platforms' dominant position as well as their abuse of market power. The questions such as establishing collusion by AI & Algorithms and unfair business practices cannot be captured under Art. 101 TFEU will not be discussed in detail. The problems of existing specific competition tools such as fines, sector inquiries, or interim measures will not be analyzed as well. P2B regulation and EU consumer law will not be discussed, despite competition benefits from being bolstered by these regulations. Lastly, when discussing the legal basis of the DMA, I provide a general view instead of arguing its legal basis.

1.5 Outline

This thesis contains five sections, including this first section as an introduction. In section 2, I explain the specific features of digital markets and incumbents' strategic behavior that creates entry barriers which leads to large platforms' dominance and abuse of their dominance in digital markets. In section 3, I discuss the features of digital markets and strategic behavior that may generate methodological, substantive, and jurisdictional (mergers) gaps when applying EU law to the digital markets. In section 4, I provide an overview of the proposed DMA. I analyze the relationship between the DMA and EU competition law, the objectives of DMA, and some of the obligations imposed on the gatekeeper. The last section concludes with an overall evaluation as well as an answer to the research questions.

2. Large Platforms in Digital Markets

Digital markets are different from traditional markets.[15] The platform is a vital business model. Besides, digital markets have several economic characteristics which do not look unique separately, but once combined, they will generate strong and lasting market power, creating entry barriers and eventually leading to a lack of competition in the digital sector.

Before I get into this section, it is necessary to explain the definition of the platform. The OECD defines the online platform as online intermediation: 'a digital service that facilitates interactions between two or more distinct but interdependent sets of users (whether firms or individuals) who interact through the service via the Internet'[16] However, to delineate the features of digital markets, the platform also includes 'offline' platform: the operating system, desktop, offline software, and app stores.[17]

Another concept that should be clarified in advance is barriers to entry. In economics, barriers to entry is a term describing factors that can impede entrants into a market and limit competition. To generalize, as Alison Jones, Brenda Sufrin, Niamh Dunne describe, a barrier to entry is 'something which prevents or hinders the emergence of potential competition which would otherwise constrain the incumbent undertaking.'[18] According to the OECD,

[15] UK Competition and Markets Authority defines digital markets 'are those where companies develop and apply new technologies to existing businesses or create brand new services using digital capabilities.' See Competition and Markets Authority, 'The CMA's Digital Markets Strategy' (2019) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/814709/cma_digital_strategy_2019.pdf> accessed 18 March 2022.
[16] OECD, 'An Introduction to Online Platforms and Their Role in the Digital Transformation' (2019) OECD Publishing, 21.26
[17] Jacques Crémer,Yves-Alexandre de Montjoye, Heike Schweitzer, 'Competition Policy for the digital era-Final report' (2019) European Commission 1.22.
[18] Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 125

there is no clear definition of barriers to entry[19]; The OECD adopts a pragmatic approach to explaining barriers to entry rather than the abstract or theoretical definition. It concerns the time and extent of the entry is likely to occur, thus emphasizing what conditions and behaviors may influence the entry.[20] Therefore, a non-exhaustive list is made by the OECD, which divides barriers to entry into two groups with several examples : structural conditions and behavior by incumbents[21] (or saying shortly: structural barriers and strategic barriers) [22] Some factors that are related to the structural barriers are more general, for instance, cost, demand, and technology which are 'either largely out of incumbent's direct control or are by-products of their efforts to compete in general' such as economies of scale, economies of scope, network effects, etc. [23] The strategic barriers arise from incumbents' intentional strategies or conduct. Incumbents can employ strategies to deter the entry, pre-empt the entry, or retaliate against the entry which is already in the market.[24]In addition, we should bear in mind structural barriers and strategic barriers can interact with each other; thus, one group may spill over to the other.[25]

To illustrate how large platforms benefit significantly from the entry barriers, I will elaborate on the main features of digital markets in the following sub-section. These features indicate several factors that create structural barriers and risks for competition (Section 2.1) but also lead to strategic behavior by incumbents. (Section 2.2)

[19] The economists have been proposed several definitions of entry barriers over 50 years. More detail introduction, see OECD 'Policy Roundtable on barriers to entry' (2005) 20-24
[20] ibid 9.26
[21] ibid. Besides, the sunk cost is a parameter permeates these two groups, *ibid* 26-28; Also see Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 128.
[22] The terms 'structural barriers and strategic barriers' are used by Alison Jones, Brenda Sufrin, Niamh Dunne, these trems are equal to the two types of OECD's definition. see Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 129.
[23] OECD 'Policy Roundtable on barriers to entry' (2005) 9. 28-33.
[24] ibid 35
[25] ibid 26

2.1 The Features of Digital Markets

2.1.1 Economies of Scale

The incumbents usually benefit from the 'extreme returns to scale' which are referred to in the Report on Competition Policy for the Digital Era as 'when the cost of production is much less than proportional to the number of customers served.'[26] Even initially, the cost of developing a platform is relatively high, but the variable costs of servicing or providing goods are small.[27]

In simple words, once a platform establishes a kind of service or provides information, it will be transmitted to more people at a very low cost, such as Google maps. If platforms have a sound user base, the services they offer will not raise their overall cost because they only need fixed costs to provide information and a small cost of servicing an extra user. Moreover, the firm can invest in fixed costs to develop the best product or service, which can attract customers due to increasing returns to scale. In such circumstances, the firm not only gains a larger customer base and enjoys a lower average cost per consumer but also offers better service or products to consumers.

Given the extreme returns to scale, it can set up barriers to entry for new entrants: Because they do not have large-scale operations to cover fixed costs, let alone reach the quality of products or services as incumbents. For example, the EC says that 'developing a smart mobile OS [operating system] is a costly and time-consuming process in the *Google Android* decision.[28]

2.1.2 Network Effects and Multi-sided Platforms

[26] Jacques Crémer,Yves-Alexandre de Montjoye, Heike Schweitzer, 'Competition Policy for the digital era-Final report' (2019) European Commission 1.20

[27] Geradin Damien and Dimitrios Katsifis 'Strengthening effective antitrust enforcement in digital platform markets' (2021) European Competition Journal. 1 <DOI:10.1080/17441056.2021.2002589> accessed 1May 2022

[28] Impact Assessment Report para 74. *Google Android* (AT.40099) [2018] C(2018) 4761 final, para 462.

In an early discussion of network effects (or network externalities), Katz Michael and Carl Shapiro describe that 'there are many products for which the utility that a user derives from consumption of the good increases with the number of other agents consuming the good.'[29] Network effects can be divided into two types: direct network effects and indirect network effects. German economist Justus Haucap describes that direct network effects 'are related to the size of a network and mean that the utility that a user receives from a particular service is directly affected by the number of other users.'[30] In simple words, the direct network effects appear when the more significant number of users involved in the same service or product, the existing users derive higher value in the network.[31] Telephone and fax machines are classic examples of direct network effects.

Indirect network effects are described as 'arise if the increase in the number of users on one side of the market attracts more users on the other market side.' by Justus Haucap. [32] Indirect network effects appear when a user group's deriving value on one side of a platform depends on another user group's number or identity of participation on the other side.[33] In other words, the participation of one group incentives or brings benefits to other groups. For instance, App developers derive significant value from Google Play because Android users are likely to buy their apps on the platform. The increasing great value also attracts more excellent developers to join Google Play. Once the platform provides various good apps, it also attracts more consumers to buy apps.[34]

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[29] Katz, Michael L. and Carl Shapiro, 'Network externalities, competition, and compatibility' (1985) 75(3) The American Economic 424
[30] Justus Haucap, 'Competition and competition policy in a data-driven economy' (2019) 54(4) Intereconomics 201.202
[31] Geradin Damien and Dimitrios Katsifis 'Strengthening effective antitrust enforcement in digital platform markets' (2021) European Competition Journal 1.9 <DOI:10.1080/17441056.2021.2002589> accessed 1May 2022
[32] Justus Haucap, 'Competition and competition policy in a data-driven economy' (2019) 54(4) Intereconomics 201.202
[33] Geradin Damien and Dimitrios Katsifis 'Strengthening effective antitrust enforcement in digital platform markets' (2021) European Competition Journal 1.9 <DOI:10.1080/17441056.2021.2002589> accessed 1May 2022
[34] Stigler Center for the Study of the Economy and the State, 'Stigler Committee on Digital Platforms Final Report' (2019) 2.38ff

Intuitively, multi-sided (or two-sided) platforms are characterized by indirect network effects in digital markets.[35] The term multi-sided (or two-sided) platforms is not a new thing, and it has appeared in many traditional models such as newspaper and credit card payment systems.[36]The definition of multi-sided platforms' is not consistent in the literature.[37] Hagiu and Wright make a clear description of multi-sided platforms. From their perspective, there are two requirements to characterize a multi-sided platform: 'they enable direct interactions between two or more distinct sides' and 'each side is affiliated with the platform.'[38] As of today, several types of online platforms are in line with these two requirements as multi-sided platforms such as marketplaces, app stores, search engines, and social networking. On the one hand, multi-sided platforms as intermediation that should be able to make each side trade, price, or deliver goods or services, etc. On the other hand, users may invest in the platform to interact with the other side, for instance, by developing an application using the iPhone's API.

From the commercial perspective, the network effects are beneficial as they can help digital platforms bring in more profits, but they have negative consequences in digital markets from the perspective of competition policy. Network effects and multi-side platforms are factors that operate as entry barriers and create risks to competition in the following ways.

Firstly, incumbent multi-sided platforms built up a critical mass on all sides with the powerful network effects (especially indirect network effects), impeding new entrants from developing their businesses and even reducing

[35] Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 61; Justus Haucap, 'Competition and competition policy in a data-driven economy' (2019) 54(4) Intereconomics 4

[36] Jens-Uwe Franck and Martin Peitz, 'Market definition in the platform economy' (2021) 23 Cambridge Yearbook of European Legal Studies 91.93ff

[37] See John M. Yun, 'Overview of Network Effects & Platforms in Digital Markets' (2020) The Global Antitrust Institute Report on the Digital Economy 2, Available at SSRN: <https://ssrn.com/abstract=3733656> accessed 30 April 2022

[38] Andrei Hagiu and Julian Wright, 'Multi-sided platforms' (2015) 43 International Journal of Industrial Organization 162. 162ff

their willingness to invest in the market, thus creating barriers to entry.[39] Secondly, incumbent multi-sided platforms frequently adopt a 'free service' (or 'zero price') strategy: offering the contents to consumers for free to attract their eyeballs; thus, these platforms profit from advertisers. In such a case, new firms cannot compete with incumbents on price.[40]This case also explains why network effects benefit incumbents' positions that new entrants cannot challenge.[41]Lastly, economies of scale and network effects also make digital markets prone to tipping. As mentioned in section 2.1.1, on the one hand, the incumbents enjoy the small cost of providing services, thus having the ability to invest in other different areas; the advantage of a large user base leads to self-reinforcing and offering free service to catch more users. On the other hand, network effects strengthen the position of incumbents. The challenge for a new entrant to the market is to design innovations to attract users or convince users to move to its platform, but it is reluctant to leave the incumbent platform because they have benefited from the network effects.[42]

2.1.3 Data-driven Business Model

Another feature of digital platforms is the data-driven business model. 'Data as a resource' is a problem in competition policy.[43] Indeed, data plays an essential role in digital platform markets; it drives social media operations, powers the algorithms, and is tradable.[44] Regarding the purpose of using personal data, it can be divided into two categories: non-anonymous use of individual-level data and anonymous use of individual-level data.[45] The

[39] Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 61
[40] Impact Assessment Report para 76
[41] ibid paras 76-77
[42] Geradin Damien and Dimitrios Katsifis 'Strengthening effective antitrust enforcement in digital platform markets' (2021) European Competition Journal 1.10ff. <DOI:10.1080/17441056.2021.2002589> accessed 1May 2022; Consumer's behavioral bias is another factor. See section 2.1.4
[43] See Justus Haucap, 'Competition and competition policy in a data-driven economy' (2019) 54(4) Intereconomics 201. 207.
[44] OECD, 'Data portability, interoperability and digital platform competition' (2021) OECD Competition Committee Discussion Paper 2.15
[45] There are other categories: aggregated data, and contextual data. See EC, Jacques Crémer,Yves-Alexandre de Montjoye, Heike Schweitzer, 'Competition Policy for the digital era-Final report' (2019)1. 25

former generally refers to when data is used for consumers' original purpose for a specific service on the platform. For example, a music streaming platform recommends songs from their song lists to users. Conversely, the goal of anonymous use of individual-level data is not to provide service to individuals.[46] As mentioned in 2.1.2, a typical example is when digital platforms offer 'free service' to attract consumers to volunteer their privacy and information. Meanwhile, these platforms not only sell information about consumers to targeted advertisers and make a profit but also accumulate data and use datasets to adjust their market strategy.[47]

Under such circumstances, information is valuable because it is tradable and can be reproduced without a high cost. In this matter, exclusive control over data by large platforms may lead to barriers to entry. Especially in the case of the incumbent and entrant providing the same service or product in a digital market, the incumbent has invested in collecting and aggregating data in a specific sector, which barriers the entrant to entry because it cannot compete with the incumbent on such a scale.[48]

Once the large platform controls and collects the data which is generated from personal users or business users, the information asymmetry privileges the big platform overviewing of the market to compete with other competitors. These competitive effects of data collection/accumulation are referred to as positive feedback loops: The incumbent improves their service by gathering raw and extensive data. Further, the better service attracts more users who provide data to the incumbent. In the end, the entrant has a disadvantage in competition with the quality of the incumbent. In simple words, the incumbent can strengthen its market position by data accumulation.[49]

[46] The distinction is relevant to the GDPR.
[47] Stigler Center for the Study of the Economy and the State, 'Stigler Committee on Digital Platforms Final Report' (2019) 1.55; Another example is data is used to train machine-learning. See EC, Jacques Crémer,Yves-Alexandre de Montjoye, Heike Schweitzer, 'Competition Policy for the digital era-Final report' (2019)1.25
[48] Nils-Peter Schepp and Achim Wambach, 'On big data and its relevance for market power assessment'(2016) 7(2)Journal of European Competition Law & Practice 120. 121ff
[49] ibid

The big platform can use algorithms to predict consumers' behaviors or match their preferences in a cross-ecosystem.[50] Large platforms offer several cross-sector services which benefit them in collecting various data and linking them together. Moreover, the network effects (i.e., more users provide data, then more collection of data) and indirect network effects (i.e., accumulating data from the other side and reusing data on the other side of the multi-sided platform) have reinforced the phenomenon mentioned above.[51] Furthermore, hindering data access is also a key factor that gives rise to business users' hard in competing with incumbents in digital markets. The relevant issues will be discussed in section 2.2.4 when we talk about the incumbent platforms' strategic behavior.

Lastly, there is an effective way to reduce the advantage of incumbents: facilitating the users' multi-homing by data portability. OECD defines Data portability as 'an ability or right of a natural or legal person to request data holders to transfer data in a structured, commonly used, and machine-readable format on a special or continuous basis to the person or third party' [52] From the view of policy, implementing data portability could reduce entry barriers arising from lock-in effects. [53] On the one hand, it can help users who want to reach a new platform by carrying their data. On the other hand, it may lower users' switching costs, thus preventing the lock-in effect in one platform or ecosystem, allowing the entry of newcomers, and promoting competition across multiple markets.[54]

2.1.4 Consumers' Behavioural Bias

[50] Luís Cabral, Justus Haucap, Geoffrey Parker, Georgios Petropoulos, Tommaso Valletti, Marshall Van Alstyne 'The EU Digital Markets Act' (2021) European Commission 1.20
[51] S Nils-Peter Schepp and Achim Wambach, 'On big data and its relevance for market power assessment'(2016) 7(2) Journal of European Competition Law & Practice 120. 121.
[52]Ibid. OECD, 'Data portability, interoperability and digital platform competition' (2021) OECD Competition Committee Discussion Paper. 10
[53] OECD, 'Data portability, interoperability and digital platform competition' (2021) OECD Competition Committee Discussion Paper.15ff; OECD, 'Ex ante regulation of digital markets' (2021) OECD Competition Committee Discussion Paper. 40-41
[54] ibid

Behavioral economics has evidenced that people tend to have bounded rationality which means they make decisions by a continuous rule of thumb. At the same time, behavioral economists also use psychological realism to improve how to understand human decision-making. The economic policy is theorized by behavioral economics, which finds application in internet economics: People could be manipulated by their biases when making predictions and decisions. [55] In digital markets, platforms use various technologies to push consumers to make certain decisions given their behavioral biases. The bias is strengthened by 'Agent-based simulations' including 'escalation of commitment' and 'availability bias': The former means users commit to being active on one platform, even though switching to another platform can bring more excellent utility. Convenience and habits of users are more advantages than the benefits of specialized platforms. The latter means that when users decide on which platform to use, they rely on the social norms and current data, such as following their friends on social media.[56]

These features of behavioral bias with the use of data by platforms (mentioned in section 2.1.3) are keeping users locked into an incumbent platform and increasing uses' switching costs which strengthen entry barriers to markets for new entrants.[57] In such cases, entrants cannot compete with incumbents who have acquired a solid user base or profit from advertisers who only invest in incumbents with single-homing users.

2.1.5 Creation of Ecosystems

Before discussing the creation of ecosystems, we should start with 'economies of scope. According to the OECD, once economies of scope are present, 'cost savings are realized because of efficiencies associated with producing,

[55] Stigler Center for the Study of the Economy and the State, 'Stigler Committee on Digital Platforms Final Report' (2019) 1. 41-42
[56] Impact Assessment Report, paras 80-81
[57] Switching costs are structural barriers but it could be used by firms as strategic barriers. see Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 134

distributing, or selling several types of products instead of just one.'[58]The incumbent enjoys lower average costs because it can save costs by distributing even if its competitor is also efficient. Moreover, the incumbent has considerable advantages, such as making huge profits as well as ensuring its potential competitor will not be profitable. Simultaneously, the entrant needs to enter several product markets to compete with the incumbent's powerful economies of scope.[59]

In digital markets, the features such as network effects and data accumulation allow large platforms to enjoy economies of scope and become efficient at completing their core service. This phenomenon occurs three-way, as Damien Geradin and Dimitrios Katsifis point out: First, the incumbents have big data through self-learning algorithms to develop new services in adjacent markets. Second, incumbents launch new services by leveraging market advantage and strong network effects. Lastly, incumbents combine data with services and products to offer effective advertising.[60]

In such circumstances, the economies of scope not only create barriers to entry but also encourage incumbents to create their ecosystems by integrating hardware and software, connecting devices to online services, or offering multi-service on the platform. For instance, in *Amazon e-book MFNs,* Amazon develops Kindle and sells e-books in a specific format, locking in e-book readers in its ecosystem.[61] Furthermore, an ecosystem is a series of services that complement each other and connect via private APIs. Privileged APIs facilitate the ecosystem to upgrade products or improve services based on algorithms.[62] As a result, the new entrants have difficulty competing with the ecosystem regardless of how good their product or service is if they do not have an API part of the incumbents' ecosystem.

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[58] OECD 'Policy Roundtable on barriers to entry' (2005) OECD Publishing.1.31ff
[59] ibid
[60] Geradin Damien and Dimitrios Katsifis 'Strengthening effective antitrust enforcement in digital platform markets' (2021) European Competition Journal.1.11-12 <DOI:10.1080/17441056.2021.2002589> accessed 1May 2022
[61] *E-book MFNs and related matters* (AT.40153) [2017] C(2017) 2876 final. para 65.
[62] Jacques Crémer,Yves-Alexandre de Montjoye, Heike Schweitzer, 'Competition Policy for the digital era-Final report' (2019)European Commission 1.23ff

From the foregoing, we can say the creation of ecosystems is a significant challenge as well as the entry of barrier for new entrants in digital markets: On the one hand, it is difficult for them to compete for a well-established ecosystem that is facilities by a solid user base and large dataset to offer suitable service experience to consumers. On the other hand, creating a new ecosystem (or entering several product markets) is also economically and technically impossible for an entrant.

2.2 Strategic Behavior by Incumbents

Once a platform has a durable position in a digital market, the incumbents might employ strategies to preserve their status, impede new firms from entering the market, or limit existing firms from expanding their business. Besides, existing firms or entrants are usually dependent on large platforms to conduct business, and we can imagine their bargaining power is weaker than incumbents' in digital markets.

In the following, I exemplify several common strategies that may be adopted by large platforms, including but not limited to MFN clauses, tying and bundling, refusal to supply data, etc. Many of them are common in other industries, but these behaviors are prominent in digital sectors that are usually based on (or accompanied by) the mentioned above features. Therefore, the effects of behaviors could be severe in digital markets. To illustrate this, some facts in the EU anticompetitive cases will be invoked under the types. These strategies may not only deter or pre-empt the entry but also foreclose markets and even harm consumers.

2.2.1 "MFN" Clauses and Anti-Steering Provisions

Business users are required to sign most favored nation ("MFN") clauses, also known as best-price clauses with incumbents. The MFN make large platforms to ensure they can provide the lowest price of product or service for the consumers (end users). Two types of MFN frequently appear in the case of digital markets: 'wide' and 'narrow' MFNs. Under the wide MFNs, the

platform prohibits business users (suppliers) sell their product or service at a lower price on the other channels. The narrow MFNs are stricter. The product or service is not allowed to be sold at a lower price on the channel which is controlled directly by a business user. In such circumstances, the business users are difficult to compete for the price. Besides, the low price magnifies the network effects, thus strengthening the competitive advantage of the incumbent.[63]

The anti-steering provision is another strategy used by large platforms. It forbids business users to direct or inform consumers of other cheaper or more attractive options outside the platforms. For example, a newspaper publisher on a newspaper app cannot notify its readers that there is another better option, such as subscribing directly on its website.[64]

2.2.2 Tying and Bundling

In digital markets, technical tying and contractual tying are common types. Big tech firms use technological tying to limit their competitors' services or products. For example, Air Tag may only be allowed to connect with iPhone or iPad. Contractual tying is used frequently by online platforms to require consumers to purchase services or products simultaneously; Subscribers of Amazon Prime are requested to tie Amazon music and movies.[65]Besides, big tech firms also offer several digital products together as one package as known as bundling.[66]

If potential consumers overlap with different digital products, large platforms might have more incentive to tie or bundle. The features of digital markets also encourage them to use these strategies, i.e., tying products to increase consumers' base and then create more substantial network effects. In addition, if large platforms adopt these strategies with market power, potential

[63] Jacques Crémer,Yves-Alexandre de Montjoye, Heike Schweitzer, 'Competition Policy for the digital era-Final report' (2019) European Commission 1.22
[64] Impact Assessment Report, para 39
[65] OECD, 'Abuse of Dominance in Digital Markets' (2020) 67ff
[66] ibid. See concepts of pure bundling and mixed bundling.

anticompetitive effects seem likely to foreclosure rivals and impact consumers if they do not have justified business reasons.[67]

In general, big tech can use tying for three purposes and generate the effect of foreclosing competition. Firstly, because of the strong network effects, tying one service with one original service or product by a large firm can foreclose competition as well as decrease users' multi-homing. Secondly, tying is an effective way to create barriers to entry for new entrants because of the complement of products. Lastly, a dominant firm can (leverage its power in other markets) by tying in a new market that does not have a monopoly yet.[68]

In the *Microsoft* case, Microsoft was supplying Windows to their computer manufacturers with a pre-installed windows media player, which could make windows media player more common for users. Further, it also made the software developers tend to use the format of the windows media player, and finally, it could result in market tipping because of network effects.[69] Another example is the *Google Android* decision. Google required device manufacturers to pre-install Google Search, the Chrome browser, and the Google App Store on Android devices. These strategies might lead to either manufacturers being unwilling to pre-install other competitors' browsers or consumers hesitating to download additional apps.[70]

2.2.3 Self-Preferencing

As of today, multi-sided platforms as intermediaries have their role setting to regulate the relationship between platform and users, the interaction between users, and the platform's design of choices such as ranking, access to APIs,

[67] ibid 41-43
[68] See more examples in OECD, 'Abuse of Dominance in Digital Markets' (2020)1. 41-43.
[69] Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 509ff; T-201/04 *Microsoft* para 1061
[70] Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 479-480; Google Android (AT.40099) [2018] C(2018) 4761 final.

or default options. Such settings are not problems. Nonetheless, we can not rule out that the large platform prior exposes its service or product to the consumers.[71] Because of large platform plays a dual role: as an intermediary between the consumers and business users that at the same time sells its products or services, it is not a surprise that it may engage in favoring itself. Self-preferencing might hamper competition and harm consumers' benefits, including reducing their choice, blocking the alternatives, increasing prices, etc.[72]

The leading example in the EU is the *Google Shopping* case. Google intentionally reduced the ranking of the search results of competitors' products compared to their products on the pages. Besides, Google also put their product comparisons in a more prominent placement out of the ordinary.[73] These strategies might lead to either Google's competitors being disadvantaged in showing their products online or consumers having no chance to choose different products.

2.2.4 Refusal to Supply Data or Interoperability

As mentioned in 2.1.3, data is valuable in digital markets. Once incumbents control and accumulate data, dose business users have any chance to access a large platform's data?[74] If the answer is yes, what kind of data should provide? And in what way? The first question is how large platforms to obtain personal data can divide into three types: volunteered data, observed data, and inferred data. Volunteered data can be contributed directly by a user's online activity such as posting on the social media or rating a place on the map; Observed data comes from observing the users' activity such as browsing pages or logging in to websites; Inferred data is transformed from the volunteered and

[71] If competition 'for' the market (such as among ecosystems), the aspect of leveraging will be different. See EC, Jacques Crémer,Yves-Alexandre de Montjoye, Heike Schweitzer, 'Competition Policy for the digital era-Final report' (2019)1.65ff
[72] Impact Assessment Report, para 41
[73] Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 527
[74] The question will be discussed under the, see section 3.1.2.2

observed data by rules of machine or computer. For instance, inferred data results from algorithms so the online platforms can predict users' consumption habits.[75] The second question is regarding the method of providing data by large platforms: one-off transfers or continuous transfers, the latter concerning the right of continuous data access and even the data interoperability.[76]

In digital markets, large platforms may refuse to share data with their business users on the platform or other competitors outside the platform, preventing entrants/competitors from developing new products/services and strengthening their market power. For example, a provider of advertising intermediation services collects many different datasets from its business users' service, further improving its targeted advertising but not sharing them with its business users.[77] In addition, refusing to supply historical and timely data to individual or business users will prevent multi-homing and high switching costs since users rely on these data to use other platforms or services.[78]In other words, consumers would lock in with the incumbent's service if competitors do not have a chance to access the incumbent's data.[79]

Interoperability may include problems with inferred data and continuous data access. Interoperability regards the interface information software providers need to make their products operate with others' programs and systems.[80]It ensures the ability of 'communication' between different digital services that

[75] Jacques Crémer,Yves-Alexandre de Montjoye, Heike Schweitzer, 'Competition Policy for the digital era-Final report' (2019) European Commission 1. 24-25; OECD, Data portability, interoperability and digital platform competition (2021) OECD Competition Committee Discussion Paper 1.10-11

[76] OECD, 'Data portability, interoperability and digital platform competition' (2021) OECD Competition Committee Discussion Paper 1.11

[77] Impact Assessment Report, para 45. Another example is: Platforms as intermediaries may hinder their business users from accessing to data generated by their service. More unfair practices see para 47

[78] Impact Assessment Report, para 45.

[79] Other reasons such as entrants would face entry of barriers if they can not access to data (because data is important in providing high quality services, i.e., search engines) See OECD, 'Ex ante regulation of digital markets' (2021) OECD Competition Committee Discussion Paper,1.40ff

[80] Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 508

can work together.[81] API is a common technical interface to implement interoperability. On the one hand, APIs ensure communication between various software. On the other hand, APIs provide third parties to obtain information or functionality from digital services.[82] Large platforms usually hope to reserve interface information of specific services or functionalities to their services. For instance, Microsoft was investigated because it refused to disclose interface information to windows for the providers of server operating systems.[83]

In simple words, once large platforms limit interoperability with other firms' services or closed API may create an entry barrier. In the former situation, incumbents may protect their market power by hindering entrants' services. In the latter case, the business user or entrant cannot provide the services from the incumbents' ecosystem to consumers without an open API.[84]

2.2.5 Mergers

Lastly**,** mergers could be another strategy for a dominant firm to eliminate their potential rivals or extend their ecosystem. One concern in the EU case when targeted a firm holds valuable and specific datasets is whether such acquisition will increase the acquirer's market power.[85] Another matter is discussed in the Report on Competition Policy for the digital era. Many start-ups hold innovative ideas or a growing user base. If an incumbent acquires the start-up, the acquisition might eliminate a potential competitor, strengthen network effects, and raise barriers to entry.[86]

2.3 Conclusion

[81] OECD, Data portability, interoperability and digital platform competition (2021) OECD Competition Committee Discussion Paper.1.12
[82] ibid
[83] Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 508.
[84] OECD, Data portability, interoperability and digital platform competition (2021) OECD Competition Committee Discussion Paper.1.20-21
[85] *Microsoft / LinkedIn*(Case M.8124)[2016]C(2016) 8404 final., paras 176.179-180
[86] Jacques Crémer,Yves-Alexandre de Montjoye, Heike Schweitzer, 'Competition Policy for the digital era-Final report' (2019) European Commission 1.111ff

Overall, economies of scale and network effects on multi-sided platforms are vital conditions of structural barriers. Network effects with economies of scale also lead to tipping in digital markets. Incumbents exclusively control and accumulate data may cause self-referencing and strong entry of barriers. The ecosystem is a significant challenge for new entrants. Besides, lock-in effects from tipping and consumers' behavioral bias lead to the competitive advantage of incumbents. Under these circumstances, large platforms may hold market power, strengthen it further in the competition, and even establish dominant positions in the digital markets.

Regarding incumbents' strategies, MFNs cause difficulty of competition on the price; tying and bundling generate the effect of foreclosing competition; self-preferencing (by using leveraging) has de facto foreclose competitors; refusal to supply data or interoperability prevents the developments of entrants/competitors; mergers might eliminate a potential competitor. When features of digital markets are combined with incumbents' strategies usually creates more substantial barriers for entrants and strengthens incumbents' market power, causing imperfect competition in digital markets. Several strategic behaviors of incumbents have already been facts and been brought to the attention of the EC or EU courts; they are already the cases regarding abuse of a dominant position is a lengthy competition issue within the legal framework. I will review their legal analysis in the next section.

3. Overview of EU Competition Law

The EU competition law deals with anticompetitive agreements, abuse of market power, mergers, public restrictions of competition, and state aid. Generally, they can be divided into two groups: ex post intervention or ex ante intervention. Art. 101 and 102 TFEU are ex post tools aiming at detecting anticompetitive agreements or abuse of market power by undertakings that have the actual or likely effect of causing distortions of competition. In

contrast, the merger control rules are carried out ex ante assessment of whether a merger or acquisition would negatively affect competition.

In the Impact Assessment Report, the EC considers the current legal framework cannot address competition problems in digital markets because: '(I) Art. 101, and 102 TFEU cannot conceptually address the issues resulting from the behaviors of large platforms in the absence of anti-agreement or dominance. Even though some competition rules can solve the market failure, such as when abusive conducts foreclose the market, the intervention is too late because the rules operate ex post.'[87] And '(II) The ongoing competition tools (e.g., Relevant Market Notice) will not tackle the problems.'[88]

To reflect on the above considerations, I will discuss how the specific features of digital markets challenge traditional concepts and tools in the current legal framework. Further, I discuss whether the strategic behavior as abusive conduct could be addressed in practice (Under Art.102 TFEU and Merger control). Therefore, this section aims to identify the methodological, substantive, and jurisdictional (mergers) gaps while applying EU competition law to digital markets.

3.1 Ex post：Article 101 and Article 102 TFEU

3.1.1 Article 101 TFEU

Art. 101(1) TFEU addresses 'anticompetitive agreements between undertakings, decisions by associations of undertakings, and concerted practices that may affect trade and have object or effect on the prevention, restriction, or distortion of competition in the internal market.'[89] Art. 101(3)

[87] Impact Assessment Report, para 119
[88] ibid, para 123. Other concerns are: Competition rules cannot address competition problems which especially are triggered by the market structure rather than by any specific conduct; Art. 101 or 102 TFEU cannot capture unfair business practices; The existing remedies such as fines, commitments cannot well address the competition problems. see paras 120-122
[89] Art. 101(1) TFEU

TFEU provides exceptions means the prohibition in Art.101(1) could be excluded by individual justification.[90]

Exposing tacit collusion could explain anticompetitive agreements are absent while applying to Art. 101 TFEU. A high risk of tacit collusion may appear in digital markets which are already oligopolistic. Sizeable oligopoly firms may behave (e.g., raise prices simultaneously) in parallel with their collective market power and without coming to agreements or concerted practices.[91] Furthermore, digital markets characterize data-driven business; the emergence of algorithms can facilitate collusive behavior, namely 'algorithmic collusion.'[92] Algorithms may work in tacit collusion by providing automatic tools. They can reach a collusive agreement and bypass direct communication.[93] In the tacit collusion (if firms do not communicate with each other and do not involve in other practices), the EU allows them to enforce collusion, which is not prohibited under Art. 101 TFEU.[94] Therefore above-mentioned conduct is unlikely not in violation of Art. 101 TFEU.

3.1.2 Article 102 TFEU

3.1.2.1 Dominance

The unilateral conduct of dominant undertaking is governed by Art. 102 TFEU; thus, it is worth noting in the discussion of digital markets. Art. 102 TFEU prohibits 'one or more undertakings that hold a dominant position in the internal market or in a substantial part of it from abusing that position (without objective justification) insofar as it may affect trade between

[90] Art. 101(3) TFEU
[91] EC, 'Summary of the contributions of the National Competition Authorities to the impact assessment of the new competition tool' (2020)4ff. <https://ec.europa.eu/competition/consultations/2020_new_comp_tool/summary_contributions_NCAs_responses.pdf> accessed 10 May 2022
[92] Massimo Motta and Martin Peitz 'Intervention triggers and underlying theories of harm' (2020) European Commission.1.24
[93] OECD, 'Executive Summary of the Roundtable on Algorithms and Collusion'(2017) https://one.oecd.org/document/DAF/COMP/M(2017)1/ANN3/FINAL/en/pdf accessed 20 May 2022.
[94] Massimo Motta and Martin Peitz 'Intervention triggers and underlying theories of harm' (2020) European Commission.1.31

Member States.'[95]When applying Art.102 TFEU, apart from the elements of undertaking and effect on inter-Member State, two main requirements should be met cumulatively in practice: First, the undertaking holds a dominant position. Second, it should amount to an abuse of a dominant position.[96]

Asserting whether the undertaking is dominant, there is a two-stage approach by the EC. Firstly, identifying the relevant market, then secondly, assessing the undertaking's position on the relevant market, i.e., assessing its market power.[97]In the Article 102 TFEU Guidance, the EC refers to dominance as 'an undertaking which is capable of profitably increasing prices above the competitive level'[98] However, the criteria will create 'Cellophane Fallacy' if the undertaking has held market power means it already has the capability to raise the price. Therefore, in assessing market power, the EC also considers other factors such as the market position of the dominant undertaking and its competitors, expansion and entry, and countervailing buyer power.[99]

When it comes to the identification of the relevant market, it is about goods or services that are interchangeable or substitutable in a relevant market with another market. [100] In the Relevant Market Notice, the EC mentions a quantitative test that has been designed for depicting markets.[101] It adopted the SSNIP (Small but Significant Non-transitory Increase in Price) test, which assumes a hypothetical small but significant increasing price of one product (A) to see whether the consumers will purchase other products (B); if the answer is yes, then the A and B are in the same market.[102]

[95] See Art. 102 TFEU. Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 277
[96] ibid
[97] ibid, 290
[98] Article 102 TFEU Guidance, para 11
[99] ibid, para 12
[100] Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019), 290
[101] Relevant Market Notice, para 39
[102] Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 106

On the one hand, in digital markets, the price does not truly present the value of goods or services on the demand side or supply side with the network effects. On the other hand, the zero-price side of the platform has become a part of digital markets.[103]e.g., Platform users give their attention or data (in the form of non-monetary) in exchange for 'free' services such as searching, videos, and music on platforms. In such circumstances, the lack of monetary price for digital services led to SSNIP being inapplicable.[104]In *Google Search (Shopping)*, the EC relinquished the SSNIP test to identify the relevant market.[105] It adopted an overall assessment, including the relevant product markets and the relevant geographic markets.[106] In the relevant product markets, the EC concluded that two exist: the market for general search services and comparison shopping services.[107]

An alternative method is the 'small but significant non-transitory decrease in quality' (SSNDQ) test[108] which emphasizes quality in the substitution analysis; the price increase in SSNIP is replaced by 'quality reduction.' For instance, regarding defining the market for Android app stores, in *Google Android*, the EC adopted SSNDQ to assert whether original equipment manufacturers include a different app store on their devices in the case of deterioration of the quality of the Android app store.[109] The quality-based quantitative test is the current mainstream, but it has not yet been able to integrate the attention and data mentioned above.[110] These are methodological challenges in contemporary practice.

[103] Jacques Crémer,Yves-Alexandre de Montjoye, Heike Schweitzer, 'Competition Policy for the digital era-Final report' (2019) European Commission 1.49
[104] Magali Eben and Viktoria H.S.E. Robertson 'Digital Market Definition in the European Union, United States, and Brazil: Past, Present, and Future' (2021) 00(00) Journal of Competition Law & Economics.1.13
[105] *Google Search (Shopping)* (AT.39740) [2017] C(2017) 4444 final. paras 243.245
[106] *Google Search (Shopping)* (AT.39740) [2017] C(2017) 4444 final. para 153
[107] ibid. para 154
[108] Magali Eben and Viktoria H.S.E. Robertson 'Digital Market Definition in the European Union, United States, and Brazil: Past, Present, and Future' (2021) 00(00) Journal of Competition Law & Economics.1.15ff
[109] ibid
[110] ibid

Another challenge is the definition of the relevant multi-sided market(s). Because of the unique features of the multi-sided platform – there are two or more consumer groups activities on the platform, whether the platform works as a whole market (the platform operates on two markets) or each side of the group has its relevant market is questionable.[111] Briefly speaking, how many markets should be defined, further, in the situation of multiple markets, how to analyze their relationship are the questions for the EC and EU courts to answer. The literature proposed an observing point to depict the markets in the digital sector: the transaction or non-transaction platforms. In the type of transaction, we can observe that different sides of the platform have transactions; conversely, in the kind of non-transaction, there is no observable transaction between different sides of the platform when they are interacting.[112]From this view, the EC and the EU courts dealt with the issue problem in payment card system cases (transaction platform style). In *Cartes Bancaires*, the EC and the GC considered two available approaches (multi-sided platform markets or one-sided markets); they chose one-sided markets approach.[113] However, the CJ gave attention to the multi-sided platform; it stressed the definition of the relevant market should be not only considered in the issuing of the payment market but also in the payment system market because 'there are interactions between the two facts of a two-sided system' [114] Magali Eben and Viktoria Robertson suggest the analogy payment card system cases can be applied to transaction platforms in digital markets. [115] Regarding the non-transaction platforms, the EC defined the market for online general search services and online comparison-shopping search services in the *Google Shopping* decision (adopting the one-side market approach).[116] Accordingly, what approach should be considered in

[111] Magali Eben and Viktoria H.S.E. Robertson 'Digital Market Definition in the European Union, United States, and Brazil: Past, Present, and Future' (2021) 00(00) Journal of Competition Law & Economics 1.19
[112] Magali Eben and Viktoria H.S.E. Robertson 'Digital Market Definition in the European Union, United States, and Brazil: Past, Present, and Future' (2021) 00(00) Journal of Competition Law & Economics.1.18
[113] ibid, 23ff
[114] ibid, 24ff
[115] ibid, 26ff
[116] See T-612/17 *Google and Alphabet v Commission (Google Shopping)*, paras 42-52. 468

cases of the relevant multi-sided market(s), especially on non-transaction platforms, the current practice has not been clarified. [117]

Assessing market power is the second step in evaluating the dominant position. According to Article 102 TFEU Guidance, some elements should consider market shares, barriers to entry, and countervailing buyer power.[118]

The EU courts and the EC rely on the market shares as the first indication to assert the market power since market shares reflect the present state of competition (actual competition) in the market.[119] Apart from taking sales figures as a calculation of market shares, the EC also considers other bases: In the *Google Shopping* decision, the volumes of user traffic in general search services are adopted.[120] Generally, if a firm's market share is above 40 %, it will likely hold a dominant position.[121] Indeed, market shares is a useful indication to evaluate market power nowadays since big techs usually have high shares in digital markets.

However, digital markets are dynamic, fast-growing, and characterized by short innovation cycles. Adopting the method of market shares is difficult, as the EC acknowledged in the *Google Shopping* decision: 'large market shares may sometimes turn out to be ephemeral and not necessarily indicative of a dominant position.'[122] On the one hand, as mentioned above, due to the network effects, the price is not truly present the value of goods or services. On the other hand, the market power is not reductive since it has arisen from

[117] Magali Eben and Viktoria H.S.E. Robertson 'Digital Market Definition in the European Union, United States, and Brazil: Past, Present, and Future' (2021) 00(00) Journal of Competition Law & Economics.1.28
[118] Article 102 TFEU Guidance, para 12; Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 328
[119] Article 102 TFEU Guidance, para 13; Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 332.
[120] *Google Search (Shopping)* (AT.39740) [2017] C(2017) 4444 final., para 267; Article 102 TFEU Guidance, para 13; Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 340.
[121] Article 102 TFEU Guidance, para 14.
[122] *Google Search (Shopping)* (AT.39740) [2017] C(2017) 4444 final., paras 274-275

the multi-sided platforms as intermediation and possession of big data.[123] The Report on Competition Policy for the digital era concludes that there is no single parameter for the authorities to measure market power.[124]

Secondly, countervailing buyer power can be a factor in evaluating market power.[125] Article 102 TFEU Guidance says, 'Even an undertaking with a high market share may not be able to act to an appreciable extent independently of customers with sufficient bargaining strength'[126] In simple words, the market power also exists on the buyer's side depending on their bargaining power. If groups of buyers or a single more significant buyer hold enough market power, they could be able to bring down the seller's price or switch between different sellers. However, it seems hard to imagine in digital markets, especially on the multi-sided platform: it is impossible to exist that a powerful buyer can decrease the price since the platform is an intermediary between users on each side. Furthermore, the users depend on the platform to interact.[127]

Lastly, the barriers to entry (or expansion) should be considered for assessing market power. In Article 102 TFEU Guidance, the EC describes this factor as 'the potential impact of expansion by actual competitors or entry by potential competitors, including the threat of such expansion or entry'[128]The barriers to entry can take various forms. Article 102 TFEU Guidance lists some barriers such as economies of scale and scope, and network effects that overlap with some features of digital markets.[129]NIn practice, the EC considered these factors in the cases of digital markets to establish undertakings' dominance. For example, in the *Microsoft* decision, the EC concluded Microsoft holds a

[123] Jacques Crémer,Yves-Alexandre de Montjoye, Heike Schweitzer, 'Competition Policy for the digital era-Final report' (2019) European Commission 1.48-50
[124] More discussion see Jacques Crémer,Yves-Alexandre de Montjoye, Heike Schweitzer, 'Competition Policy for the digital era-Final report' (2019) European Commission 1.4. 48ff
[125] See also Article 102 TFEU Guidance, para 15: 'the Commission will not come to a final conclusion as to whether or not a case should be pursued without examining all the factors which may be sufficient to constrain the behaviour of the undertaking.'
[126] Article 102 TFEU Guidance, para 18.
[127] Daniel Mandrescu, Applying EU Competition Law to Online Platforms: The Road Ahead (2017) European Competition Law Review 353ff , available at: <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3117840> accessed 15 May 2022
[128] Article 102 TFEU Guidance, para 16.
[129] ibid, para 17.

durable (not transitory) dominant position not only for market shares but also from the strong network effects.[130] Following a series of decisions, the EC established the undertaking's dominance and captured these behaviors as abuse (analyze in section 3.1.2.2).

To sum up, we could say the ideal situation is: Art.102 TFEU can address competition problems resulting from the behavior of large platforms as long as (1) the EC and EU courts can find the dominance by evaluating barriers to entry and (2) also overcome methodological gaps such as market definition. If so, the heart of the matter is the enforcement. Art.102 TFEU and other competition tools are ex post intervention - they cannot address problems effectively. However, only holding dominance is not prohibited under Art.102 TFEU, the EC, and EU courts need to examine whether potential misconduct constitutes abuse.

3.1.2.2 Abuse

Under Art. 102 TFEU, once the firm holds a dominant position, we shall examine whether the undertaking abuses its dominance without objective justification in the internal market. Art. 102 forbids a dominant undertaking to abuse its position to engage in specific conduct. The concept of abuse is not clear; according to case law, we can describe the abuse as an objective concept related to the weakening of the structure of the competition and the detriment of consumers (protection of consumers) [131] Regardless, it can broadly be divided into two conceptual catalogs: exclusionary abuse and exploitative abuse. The former indicates the conduct harm the position of competitors; the latter refers to the conduct harm directly affects the customers. [132] Further, even though Art. 102 TFEU does not prohibit

[130] *Microsoft* (COMP/C-3/37.792) [2004] C(2004)900 final., paras 448-464. See also *Google Search (Shopping)* (AT.39740) [2017] C(2017) 4444 final. paras 292-296. Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 352

[131] Case 85/76 *Hoffmann-La Roche*, para 6; C-209/10 *Post Danmark*, para 24; SeeAlison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 366-367

[132] Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 361

dominance; the EU courts have stressed that dominant undertakings have a special responsibility to ensure their conduct does not distort competition. [133] Art. 102 TFEU (a)-(d) provides four situations to set out abuse; it is a non-exhaustive list, leaving the judgment to the discretion of EU courts (and could be doing a balancing test between procompetitive potential and competition harm). [134]

In digital markets, strategic behavior by incumbents may be constituted as abusive conduct, such as MFNs, tying and bunding, refusal to supply, and self-preferencing. How these behaviors could be defined as abusive behaviors, we should review the decisions or case law.

Firstly, in the *E-book MFNs and related matters (Amazon)* decision, the EC investigated the agreement between Amazon and publishers, including requiring publishers to inform Amazon about more favorable or alternative terms of Amazon's rival. Besides, publishers should offer such terms and conditions to Amazon.[135]In the part of finding abuse, the EC was concerned about the effect of its conduct because of Art. 102 TFEU 'prohibit behavior that tends to restrict competition or is capable of having that effect' which not only prohibits dominant undertaking made access to the market is impossible for competitors, but also this will 'cause interference with the structure of competition on the market.'[136]Amazon's conduct discouraged entry because it reduced the competitor's attractive price; Besides, it decreased other e-book retailers' ability and incentives to provide service as well as prevented the development of new e-books in the digital market.[137]

Secondly, tying and bunding is a type of abuse listed in the Art. 102(d) TFEU. In the *Microsoft* case, the GC confirmed Microsoft abused its dominance in

[133] C-209/10 *Post Danmark*, para 23
[134] T-612/17 *Google and Alphabet v Commission (Google Shopping)*, paras 154-157
[135] *E-book MFNs and related matters* (AT.40153) [2017] C(2017) 2876 final., para 2.
[136] ibid, paras 73. 70-72
[137] Lars Kjolbye, Christos Malamataris & John Wileur, 'Main Developments in Abuse of Dominance Enforcement in the EU (November 2016 - October 2017)' (2017) 6(3-4) Competition Law & Policy Debate 4.12ff

four conditions in tying and bunding[138]: (I)tying product and tied product are two separate products (II)the firm is dominant in the market of tying product (III) customer have no choice about the tied product (coercion)[139] (IV) it forecloses the competition.[140] Noteworthy, the foreclosure market is decisive in establishing the tying and bunding case, which is required effects-based analysis. All relevant circumstances of each business conduct should be taken into account before the EU courts, including the balance of potential effects on competition and business justifications (efficiencies). The GC adopted EC's analysis and noticed the fact that the Windows media player enjoys the same global status as Windows, which other media players can not challenge. In addition, the Windows Media Player is pre-installed in the operating system causing its user may not change to alternative media players. Eventually, the GC confirmed one of the reasons why Microsoft foreclosed competition is generating the strong indirect network effects of the software platform[141]

Thirdly, regarding refusal to supply (data or interoperability information). Although Article 102 TFEU Guidance does not explain clearly what the elements are to constitute a refusal to supply, it mentions 'refusal to grant access to an essential facility' under the concept of refusal to supply.[142]In the *Oscar Bronner* case, the CJ adopt the Essential Facilities Doctrine (EFD) for the assessment.[143] In simple words, the refusal conduct could be an abuse if

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[138] Ariel Ezrachi, *EU competition law: an analytical guide to the leading cases* (London: Hart Publishing 2014) 272-274.

[139] From the view of the EC, the consumers were pressured into using Window's media player instead of a competitor's media player. Then the Court held that Article 102 was 'intended to prohibit dominant undertakings from strengthening its position by recourse to means other than competition on the merits' See Case T-201/04 *Microsoft Corp. v Commission*, para 1070; Also See OECD, 'Abuse of Dominance in Digital Markets' (2020) 47ff

[140] Case T-201/04 *Microsoft Corp. v Commission*, paras 842.868.1031 Also see Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 472ff

[141] Ariel Ezrachi, *EU competition law: an analytical guide to the leading cases* (London: Hart Publishing 2014) 273-274; Case T-201/04 *Microsoft Corp. v Commission*, paras 1061-1062

[142] Article 102 TFEU Guidance, para 78

[143] This is the concept from the US., referring to the dominant undertaking uses the market's bottleneck to prevent newcomers into the market. I use the term 'Essential Facilities Doctrine' here, though CJ avoided using this term. See Alison Jones, Brenda

it meets the criteria in the following: (I) the input is indispensable to carrying on the requester's business, meaning there is no actual or potential substitute. (II) the refusal prevented the appearance of a new product. (III) refusal cannot be objectively justified. (IV) the refusal is likely to eliminate all competition in another market.[144]

From the previous criteria, whether the refusal to supply data be captured as abusive conduct under Art. 102 TFEU is controversial. Firstly, can we say that access to data is indispensable for entrants, and no actual or potential substitute for it? Intuitively, data is heterogeneous, we are not sure if they can substitute for each other, and the condition of indispensable seems hard to meet. However, as Alison Jones, Brenda Sufrin, Niamh Dunne point out, an online platform cannot operate well without consumers' data, or entrants cannot set up a business without big data- such as the chicken and egg problem. [145] Secondly, whether the data or data collection an essential facility and requires regulating an antitrust issue? The study of Catherine Tucker considers the data are ubiquitous, on-rival, and not very valuable if they are alone and therefore unlikely to be an essential facility.[146] Further, Nils-Peter Schepp and Achim Wambach also suggest that it should be careful to apply EFD to the data because it will not prevent a data-rich incumbent from collecting data and firms not necessarily relying on the incumbent's data to offer services. (i.e., only applying the data are considered insurmountable barrier to entry.)[147] However, in practice, the Impact Assessment Report provides various examples showing business users are suffering from being

Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 485ff

[144] Case C-7/97 *Oscar Bronner*, paras 39-41; Ariel Ezrachi, *EU competition law: an analytical guide to the leading cases* (London: Hart Publishing 2014) 257;Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 485ff.

[145] Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 519ff

[146] Catherine E. Tucker, 'Digital Data, Platforms and the Usual [Antitrust] Suspects: Network Effects, Switching Costs, Essential Facility'(2019) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3326385>Accessed 17 May 2022

[147] Nils-Peter Schepp and AchimWambach, 'On big data and its relevance for market power assessment' (2016) 7(2) Journal of European Competition Law & Practice 120.123ff

limited or lacking data because they depend on large platforms as intermediaries to conduct business or interact with consumers.[148]

For refusal to supply interoperability, in the *Microsoft* case, Microsoft defended that its information is protected by intellectual property; thus, its refusal can be justified as well as does not constitute abusive conduct. On the one hand, the GC cleared the notion that the refusal is likely to eliminate all competition in another market. The matter is the problematic conduct is likely to eliminate all effective competition on the market, rather than demonstrate all competition on the market would be eliminated.[149] Therefore, the EC with more room to intervene in the situation of eliminating all effective competition. On the other hand, the GC supported the notion of indispensability and deep its discourse by taking account of economic viability: even the competitors can assess information with technical means (i.e., the source code was opened), and the GC emphasized the refusal of supply eliminated the entry due to the competitors are unable to clone or reproduce the products (i.e., Windows work group server operating systems)[150]

Even though the Microsoft case provided guidance on refusal to supply interoperability, the problem of requiring access to dominant firms' data hasn't been well addressed under the existing competition law. Yet, it only addresses the case of the dominant firm, and it is an ex post intervention. Further, some digital market cases need ex ante intervention, such as ensuring timely open API between the dominant platforms and others.

Lastly**,** Self-preferencing is a new type of abuse arising from the *Google Shopping* decision. The EC adopted the theory of harm to justify Google

[148] Impact Assessment Report, paras 44-47
[149] Case T-201/04 *Microsoft v Commission*, paras 560-563; Ariel Ezrachi, EU competition law: an analytical guide to the leading cases (London: Hart Publishing 2014). 262-264
[150] Case T-201/04 *Microsoft v Commission*, paras 369-436 Ariel Ezrachi, *EU competition law: an analytical guide to the leading cases* (London: Hart Publishing 2014). 262-264

leveraged its market and entrenched its market position.[151] Although there are several abusive practices under Art. 102 TFEU, they are only example practices (not an exhaustive enumeration). The EC emphasized that the dominant undertaking is prohibited from adopting conduct that is objectionable by non-dominant undertakings. This notion is 'the nature of the obligations imposed by Article 102'[152] Besides, the effect of conduct not only hinders competitors' market access but also increases the difficulty of accessing the market. In this case, the competitive structure is not only disrupted but also damages consumer welfare. Therefore, Google's conduct constituted abuse.[153]

The GC affirmed the approach by the EC and supported self-preference as a pre se prohibition under Art. 102 TFEU. Firstly, the GC repeated leveraging theory of harm to justify its statement: 'leveraging is a generic term in relation to the impact which a practice identified on one market may have on another market.'[154]It motioned that leveraging itself is not a form of abuse. Instead, it is a term to label several anticompetitive practices such as tying, refusal to deal, and margin squeeze.[155]

On that basis, other requirements should be invoked to assert self-preferencing as abuse in the present case. The GC gave five elements to constitute abuse which can be summaries (I)Google privilege exposes its comparison shopping service (CSS) (II) decrease its competitors' CSS including less visibility and ranking on the result of searching (III) Google's

[151] Overall, the theories of harm focus on: 'How an undertaking can use/leverage its dominant position in one market to favor its products in a related market.' See OECD, 'Abuse of Dominance in Digital Markets' (2020) 56. For instance, the GC stressed Microsoft leveraged its dominant position from the market for work group servers os to market streaming media players by the means of bundling and the refusal to supply interoperability information. See T-201/04 *Microsoft v Commission*, para 1344.
[152] *Google Search (Shopping)* (AT.39740) [2017] C(2017) 4444 final., paras 335-337
[153]*Google Search (Shopping)* (AT.39740) [2017] C(2017) 4444 final., para 337; Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 527ff. Also see Jacques Crémer,Yves-Alexandre de Montjoye, Heike Schweitzer, 'Competition Policy for the digital era- Final report' (2019) European Commission 1.65.
[154] T-612/17 *Google and Alphabet v Commission (Google Shopping)* para 163
[155] Elias Deutscher, 'Google Shopping and the Quest for a Legal Test for Self-preferencing Under Article 102 TFEU' (2021) 6(3) European Papers.1345. 1350ff

behaviors affected consumers' behavior (IV) Google's behaviors decreased its competitors' internet traffic on the google general search page (V) it is impossible to reproduce Google search results.[156]Besides, the GC explained that apart from the general obligation of equal treatment imposed on internet access providers by the EU regulation, the principle of unequal treatment imposes the don'ts obligation on Google. The principle is referred to it as general principles of EU law in the view of the GC: 'a system of undistorted competition can be guaranteed only if equality of opportunity is secured as between the various economic operators.'[157]

Google Shopping cases have attracted widespread attention and the discussion of establishing harm theories under Art. 102 TFEU. In digital markets, leaving aside the categorization of abuse types, the application of harm theory has been established in practice.[158] However, adopting an effects-based approach and developing theories of harm to capture abusive conduct may lead to adverse side effects of legal certainty. For example, Yasmine Bouzoraa wrote that the GC used its autonomy to limit judicial reviews not bound by national law. She argues that this understanding is outdated. Besides, she discusses that the GC did not correctly tackle some of Google's arguments regarding legal certainty.[159] In addition, conceptualizing the 'abuse' could be a better approach to reducing legal uncertainty. Pinar Akman provides a normative assessment of Art. 102 TFEU, analyzing under what circumstances Google's self-preferencing should constitute abusive behavior.[160] Despite the above criticisms and suggestions, it has become a trend in practice to invoke harm theory to catch anticompetitive behaviors in the EU digital markets. Since the digital market dynamics and novelty are

[156] ibid
[157] T-612/17 *Google and Alphabet v Commission (Google Shopping)* para 180
[158] The cases mentioned in the thesis are abusive behaviors that seem to be typed as exclusionary abuse (although some crucial cases of exclusionary abuse did not show in this thesis).
[159] Yasmine Bouzoraa, 'Between Substance and Autonomy: Finding Legal Certainty in Google Shopping' (2022) 13(2)Journal of European Competition Law & Practice 13.2 (2022).144. 144ff
[160] Pinar Akman, 'The Theory of Abuse in Google Search: A Positive and Normative Assessment under EU Competition Law' (2017) 2017 U Ill JL Tech & Pol'y 301. 301.357ff

different from the traditional concept of competition law, the EU courts are bound to create more interpretation methods to capture these behaviors.

To sum up, Art.102 TFEU can address competition problems resulting from the behavior of dominant undertakings in digital markets. However, it cannot manage some issues arising from the condition of entry barriers, such as accumulating data or hindering access to big data. Regarding the interoperability requirement, the case law provided guidance under Art. 102 TFEU. However, it is an ex post intervention and cannot solve the dominant platform that has abused its dominant position to impede the real-time interoperability of information.

3.2 Ex ante： Merger Control

As mentioned in section 2.2.5, there are two concerns about the incumbent's strategies in digital markets. First, the big firm strengthens its market power and entrenched position by acquiring the targeted firm with big data. Second, the big firm eliminates potential competitors and creates entry barriers by acquiring the targeted firm with new ideas or user bases.

The application of EUMR at the EU level relies on a turnover-based test of jurisdiction and significant impact on the effective competition test (SIEC test) of substantive assessment. Art. 1(2) and (3) EUMR provide thresholds for asserting exclusive jurisdiction; if it does not meet the threshold of turnover then the merger could be the jurisdiction of national merger law.[161] Besides, Art.2 (2) EUMR provides for the SIEC test that indicates a concentration can be prohibited if it significantly impedes effective competition, even if it does not create or strengthen a dominant position.[162]

From the foregoing, problems arise while applying the EUMR. First, regarding the procedure problem. Many start-ups usually have small

[161] Art.1(2) and (3) EUMR
[162] Art.2 (2) EUMR

turnovers before merging and do not exceed the EUMR's threshold. Therefore these mergers are not under the EU jurisdiction. Secondly, regarding the substance issue. Even if the merger can be caught by EUMR at the EU level, it is hard to identify whether the merger deal is procompetitive or anticompetitive from the view of the Report on Competition Policy for the Digital Era. On the one hand, the merger can provide better data access and innovative ideas. On the other hand, the merger may strengthen acquires' market power by strong network effects it raises barriers to entry and foreclosure of the market, even eliminating the potential threats. [163]

Furthermore, it could be challenging to consider the merger between the dominant platforms with the ecosystem, and new start-ups should be forbidden in practice. For instance, in horizontal mergers, the targeted start-up is normally considered as entering a part of the acquirer's ecosystem.[164]

3.3 Conclusion

The methodological and substantive gaps exist when asserting market power (establishing dominance). While identifying the relevant market, the SSNIP test is not applicable, and the definition of a multi-sided market also needs to be precise. Besides, analyzing barriers to entry is essential in the case of digital markets to identify market power since the approach of market shares is not flexible. Although the new notice may make up for these gaps[165], on the one hand, the nature of the notice as soft law cannot solve the problems

[163] Jacques Crémer,Yves-Alexandre de Montjoye, Heike Schweitzer, 'Competition Policy for the digital era-Final report' (2019)European Commission.1.115
[164] ibid, 116ff
[165] The EC is updating the market definition notice in first quarter 2023. EC, 'EU competition law – updating the market definition notice(revision)'<https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13308-EU-competition-law-updating-the-market-definition-notice-revision-_en> accessed 20 May 2022; In July 2021, the EC published Staff Working Document. The document mentions that the markets have developed and changed since 1997, especially in the digital sector. Thus, it is necessary to adjust the old one. See Commission Staff Working Document Evaluation of the Commission Notice on the definition of relevant market for the purposes of Community competition law of 9 December 1997, SWD (2021) 199 final. 13ff

arising from the specific feature of digital markets[166]; on the other hand, Art.102 TFEU does not sanction the dominant firm without specific conduct even if the EC finds the dominance. Further, asserting abuse depends on introducing harm theory may help the EC and EU courts to find abusive conduct. However, the intervention may be too late because of Art. 102 TFEU always operate ex post. Therefore, introducing an ex ante regulation could be helpful in governing specific conduct by large platforms. A new ex ante regulation could establish these rights. Lastly, jurisdictional gaps appear in merger control. Start-ups' turnover is usually small; thus, many mergers in digital markets will not be under the EU jurisdiction.

[166] See Impact Assessment Report, para 123

4. The Proposed Digital Markets Act

As described in previous sections, current legal frameworks cannot address or effectively address the features of digital markets and the conduct of digital platforms. Therefore, the EU needs new tools to detect misconduct in digital markets: ex ante regulation. In this section, firstly, I give an overview of the proposed DMA. Then, I evaluate its relationship with competition law, its legal principles, and the possibility of tackling anticompetitive behaviors of digital platforms or notable features of digital markets.

4.1 Overview of the Proposed Digital Markets Act

4.1.1 Legal Basis

The proposed DMA has general and specific objectives, including addressing market failures in digital markets and gatekeepers' unfair conduct. Besides, enhancing coherence and legal certainty in the internal market is also a particular objective of the DMA. [167]

According to the Impact Assessment Report, the fragmented regulation and oversight in the sector of digital within the internal market are problem drivers.[168] On the one hand, the services of gatekeepers are cross-border; on the other hand, the divergence of regulations in member states creates the risk of legal uncertainty for the market players.[169] Therefore, the EC says the competition problems in digital markets should be solved at the EU level, and the most relevant legal basis is Art. 114 TFEU.[170]

[167] Impact Assessment Report, para 109-111
[168] ibid, para 89-90
[169] ibid, para 100-101
[170] ibid, para 100-101; DMA 4ff

4.1.2 The scope of core platform services and the design of gatekeepers

In the process of identification of core platform services (CPS), the EC considers CPS to lack intervention (or in an effective manner) and characteristic of multi-sided platform services (operate one or many platforms with economic autonomy) and bargaining power. They act as a 'gateway' between the business users and end users, misusing their power as unfair behavior via the large platforms.[171]

According to Art.2(2) DMA, core platform services include: '(i) online intermediation services (ii) online search engines (iii) social networking (iv) video sharing platform services (v) number-independent interpersonal electronic communication services (vi) operating systems (vii) cloud services and (viii) advertising services, including advertising networks, advertising exchanges, and any other advertising intermediation services, or these advertising services are linked to other core platform services mentioned above.'[172] The service provider who is identified as CPS does not necessarily fall into the scope of gatekeeper.[173]

Regarding the condition for designing gatekeepers, the EC adopts quantitative and qualitative criteria. According to Art.3(1) of DMA, a CPS provider will be considered a gatekeeper at the qualitative test if it '(i) has a significant impact on the internal market (ii) operates a core platform service that serves as an important gateway for business users to reach end users (iii) enjoys an entrenched and durable position in its operations or it is foreseeable that it will enjoy such a position in the near future.'[174]

Corresponding to the qualitative criteria, the EC also designs quantitative criteria as a rebuttable presumption for the presumed gatekeeper. It includes

[171] Impact Assessment Report, para 128
[172] Art.2(2) DMA
[173] Impact Assessment Report, para 128
[174] Art.3(1) DMA. Also see Impact Assessment Report, 46ff

the size (turnover of the company), economic dependency (how many business and end users), persistence (i.e., How many CPS are provided and how long in operating them), and chose thresholds as a parameter in the legislative to achieve legal certainty.[175]Therefore, Art. 3(2) DMA provides as follows:[176]

(a) Regarding 'significant impact': a company is presumed as a gatekeeper if it (i) achieves annual turnover in the EEA equal to or above € 6.5 billion in the last three years, or market capitalization or equivalent fair market value over 65 billion in the last year, and (ii) provides a CPS in at least three Member States.[177]
(b) Regarding 'important gateway': a company is presumed as a gatekeeper if it has more than 45 million monthly active users in the EU and more than 100,000 yearly active business users in the EU in the last financial year.[178]
(c) Regarding 'enjoy entrenched and durable position': a company is presumed as a gatekeeper if the thresholds of user and business user are met in each of the last three financial years.[179]

Once a firm meets the thresholds, it shall inform the EC within three months.[180] Then the EC shall designate the company as a gatekeeper at the latest 60 days after receiving the inform.[181] If the company argues about being designated a gatekeeper (it presents a rebuttable presumption), the EC will launch a market investigation to inspect forward under the qualitative criteria.[182]Even if the company does not meet quantitative criteria, the EC still

[175] Impact Assessment Report, paras 135; Also see Herbert Smith Freehills competition team, 'European Commission proposed legislation to overhaul regulation of digital platforms in the EU' (18 December 2020)<https://hsfnotes.com/crt/2020/12/18/european-commission-proposed-legislation-to-overhaul-regulation-of-digital-platforms-in-the-eu/> accessed 6 May 2022
[176] ibid
[177] Art. 3(2)(a) DMA
[178] Art. 3(2)(b) DMA
[179] Art. 3(2)(c) DMA
[180] Art. 3(3) DMA
[181] Art. 3(4) DMA
[182] Art. 3(4) DMA

has the power to identify whether the company is a gatekeeper by taking into account the several elements such as entry barriers arising from network effects and data, scale and scope effects of the provider, lock-in effects of business user or end user and so forth.[183]

Overall, the gatekeeper's design mirrors the process we saw in asserting market power (establishment dominance) in competition law; the qualitative and quantitative criteria are similar to barriers to entry and market share.

4.1.3 The Obligations of Gatekeeper

Once the company is identified as a gatekeeper, the EC will identify its relevant undertaking and list its relevant CPS as an important gateway. The gatekeeper shall comply with the obligations within six months after CPS has been included in the list.[184] The obligations cover unfair practices, which are most prominent in the core platform service[185]separately under Art. 5 and 6 DMA as 'Obligations for gatekeepers' and 'Obligations for gatekeepers susceptible of being further specified' We can divide these obligations into a 'black and gray list' of gatekeepers' behaviors. [186] The black list corresponds to Art. 5 DMA, regulating the practices are considered anticompetitive and per se illegality. The grey list corresponds to Art. 6 DMA, including behaviors that are presumed anticompetitive (the EC indicates its obligations in the designation of gatekeeper).[187] According to my classification in the previous sections, these obligations are grouped as follows, and the behavior may be blacklisted or greylisted:

[183] Art. 3(6) DMA, especially focuse on (c)-(f) which are the structural characteristics of market.
[184] Art. 3(7)(8) DMA
[185] Impact Accessment Report, para 50
[186] Luís Cabral, Justus Haucap, Geoffrey Parker, Georgios Petropoulos, Tommaso Valletti, Marshall Van Alstyne, 'The EU Digital Markets Act' (2021) European Commission.10ff
[187] Also see Alexandre de Streel and Pierre Larouche, 'The European Digital Markets Act Proposal: How to Improve a Regulatory Revolution' (2021) N° 2 Concurrences Competition Law Review. 46.50-52
<https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3844667> accessed 15 May 2022

Firstly, regarding the wide MFNs and anti-steering provision, Art. 5(b) and (c) DMA provides: The gatekeeper shall allow business users to offer the same products or services to end users through third-party online intermediation services at flexible prices or conditions different from those offered via CPS of gatekeeper. Besides, gatekeeper shall allow business users to promote offers to end-users acquired via the CPS and conclude contracts with these end-users regardless of whether they use the gatekeeper CPS. [188] Furthermore, gatekeeper shall allow end users to access services of business users via gatekeeper's core platform services but without using gatekeeper's core platform services.[189]

Secondly, regarding the self-preferencing, the Art. 6(1)(d) DMA provides: Gatekeeper shall refrain from treating itself more favorably while ranking services and products compare to the same services or products of the third party. Further, the gatekeep shall not apply non-discriminatory conditions in ranking.[190]

Thirdly, regarding tying and bundling, Art. 5(e), 5(f) DMA provide: that when business users are using the gatekeeper's core platform services, the gatekeeper shall refrain from requiring them to operate with an identification service. In other words, the gatekeeper cannot tie its services with ID service. [191] Besides, Gatekeeper shall refrain from requiring business users(including end users) any conditional access, signing up, or registering to its core platform services, such as signing up for one service as a condition for accessing others.[192] In other words, the gatekeeper can not tie a CPS to another.[193]From the demand side, the gatekeeper shall allow end-users to un-

[188] Art. 5(b) DMA
[189] Art. 5(c) DMA
[190] Art. 6(1)(d) DMA
[191] Art. 5(e) DMA
[192] Art.5(f) DMA
[193] See also Alexandre de Streel and Pierre Larouche, 'The European Digital Markets Act Proposal: How to Improve a Regulatory Revolution' (2021) N° 2 Concurrences Competition Law Review. 46. 52ff

install or pre-installed apps on its CPS.[194] Therefore, it could prevent the lock-in effect.

Lastly, I classify data-related problems into four categories in the following:

1. The collection and aggregation of data, Art. 6(1)(a) DMA provides: when the gatekeeper is in competition with business users, it shall refrain from using any data not publicly available which is generated or provided to the gatekeeper when these business users or their customers use the CPS.[195]

2. The data access, Art. 6(1)(i) and 6(1)(j) DMA provides: The gatekeeper shall provide continuous and real-time access to data business users in gatekeeper CPS use by those business users and their end-users.[196] Besides, the gatekeeper shall provide third-party providers to access data generated by end-users on gatekeeper search engines to access data (including ranking, query, click and view).[197]

3. The request for access or interoperability, Art. 6(1)(c) DMA provides: Ensure third-party apps and app stores can use or interoperate with the OS of the gatekeeper and allow these apps and app stores to be accessed in other ways rather than on the gatekeeper CPS.[198]

4. The data portability for users, Art. 6(1)(e) and 6(1)(h) DMA provide: The Gatekeeper shall refrain from restricting end-users from switching between different apps and services to be accessed with the gatekeeper's

[194] Art. 6(1)(b) DMA
[195] Art. 6(1)(a) DMA. See also Alexandre de Streel, and Pierre Larouche, 'The European Digital Markets Act Proposal: How to Improve a Regulatory Revolution' (2021) N° 2 Concurrences Competition Law Review.46.51ff
[196] Art. 6(1)(i) DMA
[197] Art. 6(1)(j) DMA. See also Alexandre de Streel, and Pierre Larouche, 'The European Digital Markets Act Proposal: How to Improve a Regulatory Revolution' (2021) N° 2 Concurrences Competition Law Review.46.51ff
[198] Art. 6(1)(c) DMA. Another obligation is Art. 6(1)(f) which imposes interoperability between complementary services. See also Alexandre de Streel and Pierre Larouche, 'The European Digital Markets Act Proposal: How to Improve a Regulatory Revolution' (2021) N° 2 Concurrences Competition Law Review.46.51ff

OS. [199]Further, the gatekeeper shall provide continuous and real-time data generated through the activity of a business user or its end-user, particularly for end-users, to facilitate the exercise of data portability.[200] The new obligation expands the scope of data portability, including non-personal data and business users' data.[201]

For mergers, Art. 12 DMA requires the gatekeeper shall inform the EC of any intended concentration (within the meaning of Art. 3 EUMR) involving another provider of CPS irrespective of whether it is notifiable to the EU level or the national level.[202]

4.1.4 Commission's Power of Oversight and Enforcement

Overall, the DMA confers fully developed regulatory power to the EC in the institution's design. The regulatory regime includes designating the gatekeepers, specifying gatekeepers' obligations and monitoring compliance, imposing sanctions on the cases of non-compliance or systematic non-compliance, opening market investigation for the designation of gatekeepers, systematic non-compliance, and determining new CPS its new obligations.[203]

Apart from designating gatekeepers and imposing gray list obligations through quantitative and qualitative criteria or market investigation, the EC also holds extensive power over oversight and enforcement. Firstly, to ensure

[199] Art. 6(1)(e) DMA
[200] Art. 6(1)(h) DMA, See also Alexandre de Streel, and Pierre Larouche, 'The European Digital Markets Act Proposal: How to Improve a Regulatory Revolution.' (2021) N° 2 Concurrences Competition Law Review.46.51ff
[201] Ibid. Art. 20 (1) GDPR provides the right of data portability, however, it is limited to personal data, which means the information concerning an identified or identifiable natural person. Besides, it is not clear whether personal users can request what kind of data format and at what speed or frequency under the GDPR. See Jacques Crémer,Yves-Alexandre de Montjoye, Heike Schweitzer, 'Competition Policy for the digital era-Final report' (2019) European Commission. 8.81ff
[202] Art. 12 (1) DMA
[203] Alexandre de Streel, Bruno Liebhaberg, Amelia Fletcher, Richard Feasey,Jan Krämer & Giorgio Monti, 'The European Proposal for a Digital Markets Act: A First Assessment' (2021) CERRE Report 1.23ff <https://cerre.eu/publications/the-european-proposal-for-a-digital-markets-act-a-first-assessment/>accessed 9 May.

to apply the obligations to gatekeepers correctly, the EC can request information from the undertakings or conduct on-site inspections and hold the right to be heard and access the file.[204] Secondly, in prima facie non-compliance, the EC can impose interim measures[205] or accept binding commitments from the gatekeeper.[206] Further, ordering the cease and desist[207] or imposing fines[208] is possible from the EC. Lastly, regarding systemic non-compliance, which includes the gatekeeper is received three non-compliance decisions within five years or the gatekeeper keeps strengthening or extending its market position, the EC may take behavioral or structural remedies.[209]

[204] Art. 19. 20. 21. 30 DMA
[205] Art. 27 DMA
[206] Art. 23 DMA
[207] Art. 25(3) DMA
[208] Art. 26 DMA
[209] Art. 16 DMA. Alexandre de Streel and Pierre Larouche, 'The European Digital Markets Act Proposal: How to Improve a Regulatory Revolution' (2021) N° 2 Concurrences Competition Law Review.46.54

4.2. The evaluation of the proposed Digital Markets Act

4.1.1 Regulation but not competition law?

The legal basis of DMA is Art.114 TFEU instead of Art. 352 or Art.103 TFEU. In this regard, the DMA is not a competition law tool.[210] Even though it is controversial whether choosing Art.114 TFEU might be illegal,[211] the DMA is currently already underway as a regulation in the legislative process. For good or worse, the relationship between the DMA and competition law is cryptic and needs to clarify.

Firstly, we should discuss the essence of DMA legislation. The relationship between the competition law and sector-specific regulation is complementary (not substitute) in the EU practice.[212]However, there are still many differences between them. The features of sector specific regulation traditionally pursue public policy objectives to solve market failures in specific sectors such as postal services, energy, telecommunications, etc.[213] In addition, the sector specific regulation usually acts ex ante, provides more details on the matters, and affects close to the market player and the government, being a transitory phase and could be enforced by the Member States.[214] In this setting, Pierre Larouche and Alexandre de Streel explain that the DMA is not a sector specific regulation because it lacks 'avowedly sectorial focus.'[215]

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[210] Rupprecht Podszun, Philipp Bongartz and Sarah Langenstein, 'Proposals on How to Improve the Digital Markets Act' (2021).1.3 Available at SSRN<https://ssrn.com/abstract=3788571>accessed 11 May 2022

[211] More discussion See Alfonso Lamadrid de Pablo and Nieves Bayón Fernández. 'Why the Proposed DMA Might Be Illegal under Article 114 TFEU, and How to Fix It' 12(7) Journal of European Competition Law & Practice. 576.576ff

[212] Larouche Pierre and Alexandre de Streel, 'The European Digital Markets Act: A Revolution Grounded on Traditions' (2021) 12(7) Journal of European Competition Law & Practice.542.543-544

[213] Alison Jones, Brenda Sufrin, Niamh Dunne, *Jones & Sufrin's EU competition law : text, cases, and materials* (7th edn, Oxford University Press, 2019) 65

[214] ibid

[215] Larouche Pierre and Alexandre de Streel, 'The European Digital Markets Act: A Revolution Grounded on Traditions' (2021) 12(7) Journal of European Competition Law & Practice.542. 544

Further, the DMA is executed by the EC only, and the power of the Member State is limited. Moreover, other regulations such as the GDPR or P2B have specific policy goals and apply to all undertakings. In contrast, the DMA only provides purposes such as 'ensure a contestable and fair digital sector in general and core platform services,'[216] which seems closer to the competition law but not a general regulatory. From the view of Pierre Larouche and Alexandre de Streel, the DMA's goal can be understood as a part of competition policy and as a tool of EU economic regulation.[217]

Secondly, applying DMA and competition law in parallel is a special issue. Recital 10 and Art.1(6) DMA mention: 'This Regulation is without prejudice to the application of Articles 101 and 102 TFEU'[218] On the one hand, it shows the EC expressing the complementary of the DAM to competition law. On the other hand, it may cause ne bis in idem of the undertaking's same conduct. Whether the EC condemned behavior under the DMA or Art. 101 and 102, the NCA or court also can punish it? In *Deutsche Telekom* case, the CJEU held that the national regulator approves even an undertaking's conduct, it still could infringe the Art. 102 TFEU.[219]

Further, the EC also took a narrow view of the principle of ne bis in idem. In the *Telekomunikacja Polska* decision, the EC considers national law, and Art.102 TFEU applied parallel because the laws' objectives are different.[220] These examples may reveal lessons concerning the DMA: NCA and courts can address conduct that infringes the DMA under national or EU competition law even though the EC has applied them.[221]

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[216] Recital (79) DMA
[217] Larouche Pierre and Alexandre de Streel, 'The European Digital Markets Act: A Revolution Grounded on Traditions' (2021) 12(7) Journal of European Competition Law & Practice.542.543-545
[218] Recital (10) and Art.1(6) DMA
[219] C-280/08P *Deutsche Telekom*, paras 68,92
[220] *Telekomunikacja Polska* (COMP/39.525) [2011], paras. 143-145
[221] Giorgio Monti, 'The Digital Markets Act – Institutional Design and Suggestions for Improvement' (2021) TILEC Discussion Paper No. 2021-04. 1.15ff Available at SSRN: <https://ssrn.com/abstract=3797730> accessed 10 May 2022

4.2.2 A Matter of Principle: Lacking guiding principles

The objective of competition law is to ensure 'competition is not distorted in the internal market.'[222] Even though the recital (10) DMA states the DMA aims to complement the competition law instead of protecting undistorted competition. [223] The DMA is an ex ante regulation. It shall provide a clearly defined objective when regulating the presumed effect of conduct in digital markets.

Unfortunately, neither from the Impact Assessment Report nor from the proposed DMA documents, the EC does not have a rigorous explain what is 'contestable and fair.'[224] In the Impact Assessment Report, the EC introduces two problem drivers (Ⅰ)economic dependence and imbalanced bargaining power and (Ⅱ)entry barriers to the gatekeeper market. Then the EC identify them as problems in the digital market as (Ⅰ)unfair gatekeeper practices and (Ⅱ)weak contestability and competition in platform markets, leading to its objectives(ensuring contestable and fair markets in the digital sector) and getting the basics of intervention.[225]Moreover, while listing the obligations in Art. 5 and 6 DMA, the EC places much reliance on previous and ongoing cases as underlying evidence.[226] Such a legislative background makes it difficult to identify the purpose of the DMA and understand the source of each obligation since it does not aim to protect undistorted competition in the internal market.[227]

From the view of the OECD, there are two types of ex ante regulation: principles-based regulations and rules-based regulations. The former

[222] The objective shall be read Art. 3 TEU and Protocol (No 27) together. The CJ also confirmed it in the case law. See C-52/09 *TeliaSonera*, para 20
[223] See recital (10) DMA
[224] Art. 1(1) DMA
[225] Impact Assessment Report, para 112
[226] See Impact Assessment Report 53ff
[227] More observations of contestable and fair in DMA. See OECD, 'Ex ante regulation of digital markets' (2021) OECD Competition Committee Discussion Paper,1.16-17.19-20

provides flexibility for the authority to define the applicable obligations and apply them to firms. The latter offers specific dos and don'ts which will impose by the authority. In other words, the difference between the two kinds of regulation will decide how and to what extent prescriptive and proscriptive obligations can be applied to the firm.[228] Obviously, the DMA is a rules-based regulation as we saw the EC listing several identified practices as per se harmful conduct. Under these circumstances, the EC cannot easily reduce or extend the obligations to a certain gatekeeper. Principles-based regulations set general goals compared with rules-based regulations while requiring an assessment case-by-case. However, it could reduce legal certainty and predictability as a side effect.[229]

I argue that even rules-based regulations should have sound principles: black list obligations are per se harmful conduct, and the source of these obligations must be distinct. Grey list obligations are presumed detrimental conduct by the EC to indicate them to the gatekeeper. Therefore, designing more explicit guidelines helps the EC predict discretion. Besides, it helps the EC and EU courts interpret obligations and avoid the gatekeeper's evasive compliance.

There are two possible ways to find the source of obligations and link the objectives to principles. The first way is invoking the theories of harm to understand what competition problems arise in digital markets. This view is from the Centre on Regulation in Europe, which present four theories to harm and expresses why the DMA's goal is contestability and fairness. The DMA will: '(Ⅰ) address lack of transparency which is important to advertise intermediations (Ⅱ) prevent harmful platform envelopment on the supply side (including conducts such as bunding, self-preferencing, and lack of access to gatekeepers' platforms and data) (Ⅲ) facilitate the mobility of business users and end users on the demand side (including multi-homing and

[228] OECD, 'Ex ante regulation of digital markets' (2021) OECD Competition Committee Discussion Paper.1.32-33
[229] ibid 33-34

switching) (Ⅳ) prevent unfair practices between the gatekeepers and their business users.'[230]

The second way is linking the objectives of DMA and the obligations of gatekeepers by delineating them. Rupprecht Podszun, Philipp Bongartz, and Sarah Langenstein propose some principles (hereafter principle theory): '(Ⅰ) Contestability of markets: Gatekeepers have a special responsibility to secure the contestability in digital markets. They either open the market or have an entrenched position for other users who wish to enter. Therefore, the gatekeepers must not create legal or technical entry barriers that further weaken competition. (Ⅱ) Fairness of intermediation: Gatekeepers must treat every market side fairly when providing intermediation services. They act as agents to several market sides and thus shall not abuse their power and arise information asymmetries.'[231]

These two proposals have their own merits. The harm theory mainly examines the source of obligations from an economic / effect-based perspective (demand side and supply side). The principle theory establishes a good link between competition problems arising from the gatekeeper and the goals of DMA, thus helping to guide the obligation. (openness for the interpretation)

4.2.3 Imposing ex ante Obligations on Anticompetitive Behavior

As mentioned in section 4.1.3, on the one hand, the DMA listed what it considers per se abusive conduct, such as tying and bundling, and MFNs as

[230] Alexandre de Streel, Bruno Liebhaberg, Amelia Fletcher, Richard Feasey,Jan Krämer & Giorgio Monti, 'The European Proposal for a Digital Markets Act: A First Assessment' (2021) CERRE Report. 1.19ff <https://cerre.eu/publications/the-european-proposal-for-a-digital-markets-act-a-first-assessment/>accessed 9 May. Also see Giorgio Monti, 'The Digital Markets Act – Institutional Design and Suggestions for Improvement' (2021) TILEC Discussion Paper No. 2021-04.1.2ff Available at SSRN: <https://ssrn.com/abstract=3797730> accessed 10 May 20222

[231]Rupprecht Podszun,Philipp Bongartz and Sarah Langenstein, 'Proposals on How to Improve the Digital Markets Act' (2021). 1.4-6. Available at SSRN<https://ssrn.com/abstract=3788571>accessed 11 May 2022

dont's obligations. If we follow its provisions, not every conduct is per se illegal under the DMA. For example, it only forbids ranking of self-preferencing; it does not forbid all tying and bundling but instead requires gatekeepers to 'allow end users to uninstall any preinstalled software applications on its core platform service,'[232] However, to a large extent, it solves the problem that the current competition law intervenes too late and complements the competition law. Once it is adopted, the DMA can tackle these strategic behaviors as well as regulate them ex ante in digital markets.

On the other hand, the DMA also extends the right of data portability and introduces granting access to data and interoperability obligations. Regarding data portability, the DMA ensures real-time data portability, facilitating users' multi-homing and reducing network effects. However, it still does not regulate any data format. Therefore, the users might download their data and reupload them to other platforms.[233] Besides, the business user will have a similar data portability right to ensure they can access data in a continuous, real-time manner. Lastly, the DMA also imposes interoperability obligations on gatekeepers to ensure app stores can interoperate with their OS. These obligations might tackle problems arising from features of digital markets and reduce barriers to entry.

[232] Art. 6(1)(b) DMA

[233] OECD, 'Ex ante regulation of digital markets' (2021) OECD Competition Committee Discussion Paper.1.33-34.42. The obligations may be changed in the Parliament and Council negotiation. Deal on Digital Markets Act: EU rules to ensure fair competition and more choice for users <https://www.europarl.europa.eu/news/en/press-room/20220315IPR25504/deal-on-digital-markets-act-ensuring-fair-competition-and-more-choice-for-users > accessed 10 April 2022

5. Conclusion

In Section 2, I analyze and observe the features of digital markets and strategic behavior by incumbents are barriers to entry - large platforms can hold market power and adopt specific strategies in digital markets. On the one hand, they benefit from conditions of structural barriers which make it hard for new market players to enter or compete. Under these circumstances, large platforms hold market power and strength it further in digital markets. On the other hand, large platforms can employ strategies to foreclose competition based on the features of digital markets. These incumbents' strategies have already been the facts of case law within the EU regarding abuse of a dominant position as the competition problem in the digital markets.

In section 3, methodological and substantive gaps exist while applying Art.102 TFEU. In the part of measuring market power, the ongoing tools are outdated because of specific features of digital markets. Therefore, establishing dominance is difficult under the current legal framework; if the EC can establish a firm's dominant position, Art.102 TFEU does not sanction the firm without specific conduct. Even if captured as abusive conduct, the intervention is too late, and it cannot manage some issues arising from the condition of entry barriers. Introducing DMA could be helpful in governing specific conduct by large platforms and reduce the negative effects of the features in EU digital markets.

In section 4, the DMA can substantively complete the competition law by ex ante intervention, including its design of gatekeepers, the obligations of gatekeepers, and the EC's power of oversight or enforcement. Especially the listed obligations imposed on the gatekeepers can reduce the high entry barriers to the gatekeepers' market (e.g., providing the business users' right of data portability) or address abusive conduct of gatekeepers (e.g., forbidden self-preferencing in ranking) in advance. However, the DMA doesn't have clear legal principles in its articles or recital. It just mentions it aims to

complement the competition law and ‘ensure contestable and fair markets in the digital sector.’ These two terminology and legal objectives are still unclear in the context of EU law. If legislators can introduce better guidance based on principles to interpret how to reach its legal interests, it may help the proper enforcement of imposing the obligations.

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