Merger Control in Digital Era

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ABSTRACT

Mergers in digital industries happen frequently. Just tech giants have triggered hundreds of acquisitions the past decade globally. In the meanwhile, competition in digital era displays distinct features that pose challenges in merger control practice. Thus in what way such mergers should be treated and evaluated in a merger control context bewilders both practice and academia.

Against this backdrop, in order to streamline the process and obviate a protracted merger review simply due to its involvement of digital industries, from a merger control-practice angle and with referring to literatures and practices in major jurisdictions, this article seeks to offer key considerations of thorny noval issues at each important aspect of merger control in digital era and propose possible solutions to locate an optimal trade-off between public and private sides. The article discusses the following issues in digital era in sequence: Notification threshold's application and modification; Market definition; Indicative role of market shares; Impacts of peculiarities of digital markets in competition analysis; Possible ways to seek the optimal trade-off; and Concluding remarks.

I. INTRODUCTION

Merger-control has been proven to be effective to *ex-ante* regulate potential anti-competitive mergers by antitrust authorities in distinct jurisdictions. From 2010 to 2019, it is estimated that European Commission ("EC") has reviewed around 3200 merger cases.[1] Since zChina's Anti-Monopoly Law came into force in 2008, it is reported that as of the end of

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[1] European Court of Auditors, *The Commission's EU Merger Control and Antitrust Proceedings: A Need to Scale Up Market Oversight,* Special Report 24/2020 (2020), https://op.europa.eu/webpub/eca/special-reports/eu-competition-24-2020/en/

November 2020, China's antitrust authority State Administration for Market Regulation ("SAMR") has reviewed around 3300 merger cases.[2]

The turning of 21st century, Internet and the digitalization have transformed the traditional offline business model and led to an exploding growth of online platform businesses.[3] An increasing number of mergers involving online platforms corresondingly keep popping up. Online platform competition in digital markets displays a number of particularities, calling into question of effectiveness of existing merger control scheme in policing online platform-involved mergers and posing challenges on how to proceed merger review in practice. Against this dilemma confronting authorities, researchers and practitioners to keep the merger control practices up, this article attempts to address prominent issues at each important aspect of merger control and to seek practical ways to move merger control review forward. This firstly article identifies the below particular characteristics of critical significance in merger control in digital times.

Network effects

Network effects refer to that the value of a service increases along with the number of users' arising. A typical example is the use of mobile phones. Mobile phones become useful only if people on the other end also use them.[4] This is known as direct network effects often observed in single-sided platforms. Indirect network effects more appear on online platforms wherein multiple groups of users exchange value with one another. Indirect network effects mean that more users on one side, the more value of the platform will be to customers on the other side, and vice versa.[5]

It is worth-noting that under some circumstances direct network effects also exist on online platforms, and indirect network effects flow only in one direction. In an instance, online social networking platforms like Facebook exhibit direct network effects owing to the interaction needs of users on the same side;[6] in the meanwhile, indirect network effects seem to just happen on advertisers' side who would be attracted to Facebook's platform with the increase of users, but not vice versa, given users' indifference or even aversion towards the constantly popping-up ads. Network effects affect substantially on the business strategies of online platforms and shall be accounted with in the nearly whole merger control process.

Skewed pricing scheme

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[2] Zhichanli (知产力), *Cong 3359 Jian Gongkai Anli Kan Zhongguo Fanlongduan Zhi Jingyingzhe Jizhong (从 3359 件公开案例看中国反垄断之经营者集中) [To Learn About China's Undertakings' Concentration through 3359 Public Cases]*, Baidu (Jan. 07, 2021), https://baijiahao.baidu.com/s?id=1688196694593798857&wfr=spider&for=pc (last visited July 28, 2021).

[3] Online platforms refer to the business relying on the internet active in a two/multi-sided market connecting and serving two distinct but interdependent groups of users. *See* OECD, *Market Definition in Multi-sided Markets - Note by Sebastian Wismer & Arno Rasek*, at 2 (2017) [hereinafter *Wismer & Rasek's Note to OECD*].

[4] Nicholas L. Johnson, *What are Network Effects?*, Applicoinc (Feb. 2018) https://www.applicoinc.com/blog/network-effects/ (last visited Apr.7, 2021).

[5] *Id*.

[6] Daniel Mandrescu, *Applying EU Competition law to Online Platforms: The Road Ahead - Part 1*, 38(8) Eur. Competition L. Rev., 353, 357 (2017).

Network effects of online platforms give rise to a "chicken and egg" consideration. In order to survive sustainably, operators of online platforms need groups of users of both sides on board.[7] This makes it necessary to adjust the pricing scheme to best take advantage of network effects. This leads to a skewed pricing scheme adopted by the most majority of online platforms that charges customers on one side but serves users on the other free of charge or even with subsidies.[8] Take Adobe as an example. Adobe's portable document format (PDF) did not take off until Adobe provided the PDF reader free of charge, which in turn substantially increased its sales of PDF writers.[9] The like of cases include Apple's APP Store and Amazon's online retail market.

In traditional markets, the set zero/low price not adequately matching the incremental cost of services may raise concerns regarding a predatory strategy pursued by dominant market players to foreclose competitors. But in digital markets, it does not necessarily indicate that the platform has market power or engages a predatory strategy.[10] In the merger control context, such skewed pricing scheme, however, casts doubts on the effectiveness of the turnover-based threshold adopted in a majority of jurisdictions to capture mergers in digital markets. Because such pricing scheme rewards slight revenue to online platforms, especially their initial years, relevant mergers may fail to trigger the the turnover-based threshold and escape from undergoing a merger control examination.

Hybrid services

Digital platforms can easily expand their offerings across multiple sectors after having accumulated an appreciable userbase and database. Tech giants like Google, Amazon, Facebook, Apple and Microsoft (collectively "GAFAM") besides running their flagship products have all expanded their portfolios into a wide array of digital services. Likewise, the Chinese tech giant Tencent originally mainly operated in the online communicating services, it subsequently adds email services, online games into its offering package after having achieved vast amounts of users. Along with its roll-out of Wechat in 2010, Tencent entered the online payment service (i.e. Wechat payment).[11] Gradually, Wechat has grown into a digital ecosystem with embedding in ancillary mini-programs, which open routes for offline stores in different sectors to provide online services for Wechat users. The hybrid services provided by online platforms make it more thorny in defining relevant markets.

Data-driven

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[7] Lapo Filistrucch, *Network Effects and the Efficiency Defence in Mergers among Two-Sided Platforms*, 5, 35 (2017).

[8] OECD, *Two Sided Markets*, DAF/COMP(2009)20, at 150 (2009); *See also* Richard Schmalensee, *Why is Platform Pricing Generally Highly Skewed*?, Rev. of Network Econ. 10(4), 1 (2011).

[9] OECD, *supra* note 8, 109.

[10] David S. Evans, *Multisided Platforms, Dynamic Competition, and the Assessment of Market Power for Internet-Based Firms*, 2016 Coase-Sandor Working Paper Series in L. & Econ. No.753, 27. https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=2468&context=law_and_economics.

[11] The Wechat payment is embedded into Wechat app as a digital blockette instead of being a stand-alone app.

Users' data is valuable in offering services by online platforms.[12] The collection and analysis of large volumes of users' data can help reach better business decisions[13] and help design offerings catering to users' needs. In addition, the use of algorithms derived from the collected users' data renders online platforms more appealing to advertisers for providing targeted-advertising services, thereby generating profits and compensating the free-of-charge side. In combination with network effects, the resultant good-quality offerings on the user side would woo more users to the platform, and in turn attract more advertisers on the other who would again bring in capital. As a consequence, a data-related network effect can achieve a positive feedback loop on the online platform, possibly leading to the market tipping to a few incumbents.

Seemingly dynamic

The dynamic feature has potential rendering platforms' market power ephemeral. In particular if nascent platforms possess disruptive innovations, such innovations may vest nascent companies with great potential to draw large-scale of users and facilitate them to fastly develop into a threat against large incumbents.[14]

Nonetheless, it does not mean that the dynamic feature amounts to a panacea to the restrain powerful or dominant market players in digital markets. On one hand, sophisticated incumbents that already equipped themseleves with enormous userbase, aggregated datasets, and scale economics tend to easily foreclose nascent competitors; on the other, large incumbents have triggered hundreds of acquisitions over nascent companies in the past decade.[15] These acquisitions give rise to concerns whether such "big tech mergers" would stifle disruptive innovation,[16] and throw a damp over the dynamics of the markets. It is thus crucial to measure the role of the dynamic feature in digital markets in its effects dispelling "foreclosure concerns" and its relevance to acquisitions of an intention to stifling innovation.

With considerations of these parcularities of digital markets, the remainder of this article proceeds as follows to dissect challenges facing merger control in digital times and propose possible solutions.

Section II talks about whether the existing turnover-based notification threshold is in need of modification. In particular, it examines pros and cons of the possible and most-advocated metrics including market share and transaction value to supplement the turnover-

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[12] Andres V. Lerner, *The Role of "Big Data" in Online Platform Competition*, 4 (2014), https://ssrn.com/abstract=2482780.

[13] Anca D Chirita, *Data-Driven Mergers under EU Competition Law*, *In The Future of Commercial Law: Ways Forward for Change and Reform*, Oxford: Hart Publishing, 147, 163 (2018).

[14] David S. Evans, *Why the Dynamics of Competition for Online Platforms Leads to Sleepless Nights, But Not Sleepy Monopolies*, at 27-28 (2017), https://ssrn.com/abstract=3009438. (take a number of market players' rise-and-falls as examples, Evans illustrate how the disruptive innovations can swiftly transform the competition landscape in digital markets).

[15] Digital Competition Expert Panel, *Unlocking digital Competition*, at 2 (2019) [hereinafter *the UK Report*], https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf.

[16] Marc Bourreau & Alexandre de Streel, *Big Tech Acquisitions Competition & Innovation Effects And EU Merger Control*, Ctr. on Regul. in Europe (CERRE) Issue Paper, 15 (2020).

based one. Going forward, it touches upon the question whether an enforcement gap indeed exists calling for an alternative threshold to be introduced.

Section III touches upon the market definition. It first examines the application of the hypothetical monopolist tests ("HMTs") test in digital times. Then it discusses how to define a "multi-purpose" market on which the platform serves a wide range of services across different sectors. Thirdly, it talks about whether a single-market approach or a multi-market approach should be adopted for defining markets for two/multi-sided online platforms with referring to merger cases in distinct jurisdictions in practice. Lastly, this article suggests putting less weight on market definition in digital era.

Sections IV and V are about the substantive assessment in the merger control procedure, separately discussing the "market share" and substantive assessment. Section IV looks into the calculation of market shares of digital markets. On one hand, it outlines the metrics for properly proceeding such calculation. On the other, it touches upon under what circumstance the network effects may need be accounted with in the evaluation of market shares of online platforms. It also holds that less significance should be attached to market shares in assessing market power of merging parties. Section V particularly examines the possible concerns arising from the above-introduced peculiar features in market competition, i.e. network effects and the role of data. It primarily analyzes whether network effects would likely lift market entry/expansion barrier so as to increase the degree of market concentration post-merger, and whether the acquisition of data through mergers would give rise to competition concerns.

Section VI seeks to find practical solutions to cope with challenges brought by peculiarities of digital markets and move the merger control procedure forward. Firstly, it discusses the so-called "panacea", i.e. disruptive innovation/dynamic feature's role in dispelling competition concerns. In this regard, it identifies the keys to resort to "disruptive innovation" is two-fold, i.e. (i) disruptive innovation v. the strengthening of market entry barrier; (ii) disruptive innovation v. "killer acquisitions", which is further divided into three case-scenarios. Secondly, it explores other factors having effects of dismissing or offsetting competition concerns out of the merger. The last Section VII concludes the findings of this article.

II. NOTIFICATION THRESHOLD - IN NEED OF MODIFICATIONS?

A. Background

To trigger a filing obligation, the transaction has to meet the notification threshold. Most jurisdictions (including the EU, China, and the U.S.) adopt the metric of turnover to set their notification threshold, given its edges in clarity in implementation, relevance in straightforward indicating the significance of the parties and the transaction's local nexus.[17] It

[17] *See* OECD, *Local Nexus and Jurisdictional Threshold in Merger Control - Background Paper by the*

has been effective in traditional markets where the products/services' value is weighted by money. While in the digital markets, as introduced above, online platforms may focus more on the growth of their customer base than the revenue accumulation to achieve scalable network externalities at the beginning,[18] they usually resort to a skewed pricing strategy that serves on users of one side free of charge. If such platforms are to be acquired, their revenue may not be able to satisfy the turnover-based threshold thereby rendering the merger averting a merger control scrutinization. This may let slip a merger having innovation-stiffling effects, since the acquirer is possibly driven by throttling a nascent competitor which has appreciable competition potential to grow into an intimidating threat in the future.

The transaction between Facebook and Whatsapp in 2014 stirred hot-debates about whether the turnover-based threshold would be adequate to serve the digital times.[19] *Facebook/Whatsapp*[20] did not trigger the EU-level merger filing threshold due to the fact that at the time of merger, Whatsapp had not made any revenue; whilst it ultimately came within EC's merger control purview thanks to the referral system stipulated in Article 4(5) of the EU Merger Regulation.[21] Another case is the Apple/Shazam.[22] The turnover of Shazam then did not meet the EU-threshold, whereas pursuant to Article 22 of the EUMR, the case fell within the ambit of EC's review. The like of cases happens in the internet industry in China as well, e.g. the merger between two of the largest ride-hailing platforms DiDi and KuaiDi in China in 2015. Notwithstanding that the ride-hailing market was a duopoly in China where the combined market share of the merging parties had been estimated up to 99%,[23] the merger did not trigger the merger filing threshold given their insufficient revenue. In 2016, the merged entity DiDi's acquisition over Uber China was not subject to the merger control in China either,[24] as quoted from DiDi that "[T]urnover obtained by Uber in China in the last financial year did not meet the notification threshold."[25] With a view to these cases, it is thus of rationale to doubt whether the turnover-based threshold remains effective to capture

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Secretariat, DAF/COMP/WP3(2016)4, at 19-20 (2016) [hereinafter *OECD Threshold Report*] (it assesses that up to 76% of the countries as counted have solely relied on a turnover-based threshold in their merger control scheme; and it can be extrapolated that over 90% of such countries have combined the turnover-based threshold with other metrics (like market share, assets or transaction value)).

[18] Bourreau & de Streel, *supra* note 16, 15.

[19] Willard Mwemba, *Merger Regulation and the Digital Economy; Are Competition Authorities Up to the Task?*, Kluwer Competition L. Blog (Aug.1, 2019), http://competitionlawblog.kluwercompetitionlaw.com/2019/08/01/merger-regulation-and-the-digital-economy-are-competition-authorities-up-to-the-task/.

[20] European Commission Decision CASE COMP/M.7217 Facebook/Whatsapp, Oct.3, 2014, C(2014) 7239 (Eur.).

[21] Council Regulation 139/2004 of 20 January 2004 on the Control of Concentrations between Undertakings (the EC Merger Regulation), 2004 O.J. (L 024) 5, § 4 (Eur.)[hereinafter *EUMR*].

[22] European Commission Decision CASE COMP/M.8788 *Apple/Shazam*, Sept.6, 2018, C(2018) 5748 (Eur.).

[23] Yunting You (游云庭), *Didi Kuaidi Hebing, Fanlongduan Shencha Bie Xianzhe (滴滴快的合并，反垄断审查别闲着) [The Merger Between DiDi and KuaiDi, Antitrust Review Shall Step In],* BJNEWS, Feb. 16, 2016, http://www.bjnews.com.cn/opinion/2015/02/16/353974.html (last visited Jul.10, 2021).

[24] Jingzhengfa Yu Shangye Zhanlue (竞争法与商业战略), *Didi Youbu An Buneng Buliaoliaozhi, Kan Dongnanya Ruhe Fanlongduan (滴滴优步案不能不了了之，看东南亚如何反垄断) [Call for Review on Merger between DiDi and Uber, with Reference to Southeast Asia's Antitrust Practice]*, Sept.3, 2018, https://mp.weixin.qq.com/s/Kdg9p0gi4u4-yIWL0weajQ (last visited June 5, 2021).

[25] Wei Han & Yajie Gao, *Challenges and Prospects for Merger Control in China in the Digital Economy*, at 3 (2018), https://ssrn.com/abstract=3395552.

mergers in digital markets; if negative, what other metrics are considered appropriate to be a supplement or replacement?

B. Evaluation on Conceivable Metrics

1. Market share

The market share-based threshold has been used in a number of jurisdictions, including Spain, Singapore, and the UK, supplementing a turnover-based one.[26] Generally, if post-merger the market share of the merged entity would increase to a certain extent (e.g. in the U.K., the benchmark is 25% for the enhanced market share) provided in the respective regulations, the filing obligation could be triggered.[27] The market share-based threshold has advantages. It bridges the gap left by a monetary threshold where the target has not generated enough revenue required by the filing obligation. It also hints the magnitude of the merger, by allowing the competition authority to *ex-ante* evaluate parties' market power and the degree of market concentration post-merger. With such advantages, it previously brought the mergers *Facebook/Instagram*[28] and *Google/Waze*[29] into the jurisdiction of the U.K.'s competition authority Competition and Market Authority ("CMA") and the *Facebook/Whatsapp* and *Apple/Shazam* within the jurisdiction of the Spain's competition authority National Competition Commission ("CNC").

Nonetheless, the market share-based threshold has an endogenous infirmity yielding it less pragmatic for use in the digital markets. A premise to estimate market share is to define relevant markets, which even in the traditional market is complex. Given the two-sided and dynamic feature of online platforms, and the ever-blurring boundaries between markets in digital era, the process to define a relevant market would "[n]ot only be difficult but artificial".[30] Such premise would make the estimation of notification obligation protracted. In addition, the pre-estimated market share may play out more to indicate the market power change in horizontal cases. While in digital markets, a majority of mergers are of non-horizontal feature.[31] It may fall short to capture and indicate the significance of non-horizontal mergers.

2. Transaction value

Another alternative is the transaction-value-based threshold. Just following the *Facebook/Whatsapp* in 2014, which unearthed the potential gap between the parties' turnover and the significance of the merger in digital industry, the Germany's competition authority Monopolies Commission issued a special report which alarmed the need to adapt the

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[26] Practical Law, *Merger Control Thresholds*, Thomson Reuters (Mar.1, 2020), https://content.next.westlaw.com/Document/I75d2de55f61011e398db8b09b4f043e0/View/FullText.html?contextData=(sc.Default)&transitionType=Default&firstPage=true&bhcp=1 (last visited May 27, 2021).
[27] *Id.*
[28] U.K. Off. of Fair Trading Decision [OFT Decision] CASE No.ME/5525/12 *Facebook/Instagram*, No.ME/5525/12, Aug.22, 2012 (U.K.).
[29] U.K. OFT Decision CASE No.ME/6167/13 *Google/Waze*, Dec.17, 2013 (U.K.).
[30] Martin Gassler, *Why the Introduction of A New Transaction-Value Jurisdictional Threshold for the EUMR Has Been Postponed, At Least for Now*, Oxford Competition L. (2019), https://oxcat.ouplaw.com/page/775#35.
[31] Elena Argentesi et al, *Ex-post Assessment of Merger Control Decisions in Digital Markets*, Lear, at 20 (2019) (Document prepared by Lear for the Competition and Markets Authority) [hereinafter *Lear Report*].

traditional turnover-based threshold in responding to the digital era and introduce the transaction value-based threshold.[32] Afterwards, Germany issued its Ninth Amendment to the German Act against Restraints of Competition (effective as of June 2017), incorporating a transaction-value-based threshold (i.e. the benchmarket for the transaction value EUR 400 million) combined with a local nexus text as a supplement to the monetary one. Likewise, Austria introduced a transaction-value-based threshold setting the baseline as EUR 200 million (effective as of November 2017).[33]

The transaction value-threshold appears to be more straightforward to apply compared with a market share-based metric, given that it does not need the confine of a product market in advance. The purchase price also directly indicates the significance of the transaction and the target concerned, resolving the predicament that the target's turnover may not match its competition potential. In this regard, the transaction value-based threshold seems to be ideal to supplement the monetary threshold.

Nonetheless, the transaction-value metric is not impeccable either. First, the measurement of the transaction-value is not as straightforward as it seems. In practice, the value of transaction may not just refer to cash payments, it comprises all assets and monetary benefits like voting rights, securities, intangible assets earn-out clauses, option-rights or other consideration that are conditional upon the future profitability of the target at a specific point of time.[34] Surcharges and premiums exceeding the purchase price should also be counted in the consideration-value.[35] As a consequence, unlike the turnover metric which can be verified simply by referring to the merging parties' financial report, an accurate evaluation of the transaction value requires a holistic and detailed evaluation and computation.[36] Second, how to establish the local nexus for a transaction-value threshold poses a challenge. Pursuant to the Joint Guidance issued by Bundeskartellamt (German Cartel Office; "BKA") and Bundeswettbewerbsbehörde (Austrian Federal Competition Authority; "BWB"), relevant criteria include "[u]ser numbers ('monthly active users'), the access frequency of a website ('unique visitors'), daily active users ('DAU'), local location of the asset, and the use of the asset for business activities".[37] To process the local nexus test may thus be less readily applicable in comparison with a local turnover-metric required in the turnover threshold. Third, the transaction value metric may capture non-targeted transactions in traditional industries risking burdening the strained resources of competition authorities. Post the introduction of the transaction-value threshold, in Germany 18 cases were thus triggered in

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[32] *Id.*; *See also* German Monopolkommission [German Monopolies Commission] *Wettbewerbspolitik: Herausforderungen digitale Märkte [Competition policy: the challenge of digital markets] Sondergutachten 68 [Special Report 68],* 157 (2015) https://www.monopolkommission.de/images/PDF/SG/SG68/S68_volltext.pdf.
[33] Bundeskartellamt [BKA] [Federal Cartel Off.] & Bundeswettbewerbsbehörde [BWB] [Federal Competition Authority] *Guidance on Transaction Value Thresholds for Mandatory Pre-merger Notification (Section 35 (1a) GWB and Section 9 (4) KartG)*, ¶ 19 (2018) (Ger.&Aus) [hereinafter *Joint Guidance*].
[34] OECD, *Start-ups, killer acquisitions and merger control – Note by Germany*, DAF/COMP/WD(2020)20, at 4 (2020) [hereinafter *Germany OECD Note*).
[35] *Id*.
[36] Certainly, if the purchase price has exceeded the stipulated threshold to a great extent, like that of the Facebook over Whatsapp, a comprehensive evaluation should be meaningless.
[37] *Joint Guidance*, *supra* note 33, ¶¶ 67-70.

2017 and 2018, with 7 being withdrawn and 11 being cleared.[38] And a large part of these cases filed per transaction-value concerned the pharmaceutical and IT industries.[39] It is not clear to tell now whether the newly-added threshold would capture "right" cases fitting in BKA's original intention,[40] and with the possibility that an unintentional expansion of merger review workload would take the authorities' important resources away from cases arising more severe competition concerns. Fourth, this may likely result in a chilling effect on the emerging digital markets . The expansion of merger control may lead to the capital-trapped start-ups waiting for long receiving the needed investments.[41] In particular if the target is of deficiency in its own ability to develop or attract another buyer, the capital resources from the acquirer may be critical for its survival.[42]

C. Enforcement Gap Exists Calling for Alternative Threshold?

In answering whether an enforcement gap exists in practice thereby needing a deal-value threshold to be added, it is actually contingent upon the situations in specific jurisdictions. Germany and Austria are the first two countries ushering in the introduction of an additional deal-value threshold to their notification scheme to capture transactions of which significance is disproportionate to the turnover of the target. Whilst at the Union level, though EC reacted fast after *Facebook/Whatsapp* by launching a public consultation on the effectiveness of the turnover-based threshold in July 2016,[43] it decided against a modification based on the feedback from stakeholders after a year.[44] And this stance was further affirmed in the subsequent *Special Report: Competition Policy for the Digital Era* by the consultants of EC[45] and the most recent *Evaluation Results and Follow-up Measures on Jurisdictional and Procedural Aspects of EU Merger Control*[46]. Likewise, the French Competition Agency ("FCA") has ruled out the possibility to introduce a transaction-value threshold as it would not suit for the French economy. Instead it decides to move forward with an *ex-post* merger control regime, enabling to securitize certain transactions of potential anti-competition concerns that fail to meet notification threshold. In China, the Platform Economy Antitrust Guidance issued by SAMR in February 2021 also sticks to the turnover criteria for China's

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[38] *Germany OECD Note*, *supra* note 34, 5.
[39] *Id*., at 6.
[40] *Id*., at 8.
[41] AZB & Partners, *Introduction of Alternative Merger Control Thresholds – Is It the Way Forward?* (2018), https://www.azbpartners.com/bank/introduction-of-alternative-merger-control-thresholds-is-it-the-way-forward/ (last visited Aug.10, 2021).
[42] *Lear Report, supra* note 31, 3.
[43] European Commission, *Consultation on Evaluation of Procedural and Jurisdictional Aspects of EU Merger Control* (2016) (closed) (Eur.), https://ec.europa.eu/competition/consultations/2016_merger_control/index_en.html.
[44] European Commission, *Summary of Replies to the Public Consultation on Evaluation of Procedural and Jurisdictional Aspects of EU Merger Control* (2017) (Eur.) [hereafter *Summary of Notification Threshold Consultation Result*], https://ec.europa.eu/competition/consultations/2016_merger_control/summary_of_replies_en.pdf.
[45] Jacques Crémer Yves-Alexandre de Montjoye & Heike Schweitzer, *European Commission: Competition Policy in the Digital Era*, 113-115 (2019).
[46] European Commission, *Mergers: Commission Announces Evaluation Results and Follow-up Measures on Jurisdictional and Procedural Aspects of EU Merger Control* (2021) (Eur.) [hereinafter *Merger Control Evaluation Results*], https://ec.europa.eu/commission/presscorner/detail/en/ip_21_1384.

merger control. Whereas it also entitles China SAMR with wide discretion to review transactions involving platforms of potential to raise competition concerns.[47]

As stated above, either the market share- or transaction value-based threshold has their intrinsic downsides, and whether a need for supplementing the current turnover-based threhold is imminent comes down to a jurisdiction-specific matter. For the EU, weighing against the downsides of the possible metrics, in particular throwing a damp over dynamics of digital markets, as outlined in its *Summary of Notification Threshold Consultation Result* in 2017 and the *Special Report Competition Policy in the Digital Era*, the EU itself decides to resort to encouraging the more use of the referral system stipulated in Article 4 and 22 of the EUMR,[48] instead of modifying its current notification sccheme as announced in recent Merger Control Evaluation Results.[49] The referral system allows merging parties or interested Member States to refer the case at hand before EC enabling EC to review the case that does not trigger an EU-level filing obligation. Thanks to the referral mechanism, EC was able to screen *Facebook/Whatsapp* (2014), *Microsoft/Github* (2018)[50] on the basis of Article 4 of the EUMR, and *Apple/Shazam* (2018) on the basis of Article 22. In addition, the introduction of the transacction-value based threshold by Germany and Austria would capture more cases under their jurisdiction and thus enhance the possibility for initiating the referral system. Thus, in the combination of a turnover-based threshold and a referral system, EC views that the current scheme "[p]roves effective in capturing significant transactions in the EU internal market"[51].

As in jurisdictions like French or China, where the competent agencies are entrusted with wide discretion to scrutinize transactions failing to meet the threshold, concerns may arise that whether this approach lack the legal certainty required by a notification scheme.[52] Nonetheless, it is firstly worthwhile to point out that even if to introduce an supplementary threshold, an absolute legal certainty cannot be guaranteed. This is demonstratable in a U.S. case. The U.S. is a jurisdiction having incorporated a two-fold notification threshold (i.e. the size-of-transaction test and the size-of-person test) in its Hart-Scott-Rodino ("HSR") Act.[53] But as in the acquisition by Bazaarvoice over PowerReviews in 2012, the parties did not make a file as it did not pass the size-of-transaction test in the HSR Act.[54] After its consummation, it was challenged by the Department of Justice ("DoJ") relied on the Section 7 of the Clayton Act, and brought before the District Court of the Northern District of California. The parties were top two and also close competitors operating the online product reviews and ratings platforms (R&R) market. The DoJ was concerned that, pursuant to the U.S. 2010 Horizontal Merger Guidelines, the merger would eliminate head-to-head

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[47] China SAMR, *Pingtai Jingji Fanlongduan Zhinan (平台经济反垄断指南) [Platform Economy Antitrust Guidance]* §§ 18, 19 (2021) (China) [hereinafter *Platform Economy Guidance*], http://www.samr.gov.cn/fldj/.
[48] EUMR, *supra* note 21, §§ 4, 22.
[49] *Merger Control Evaluation Results*, *supra* note 46.
[50] European Commission Decision CASE COMP/M.8994 *Microsoft/Github,* Oct.19, 2018 C(2018) 7020 (this is a case referred by Germany based on EU Merger Control's referral system) (Eur.).
[51] *Merger Control Evaluation Results*, *supra* note 46.
[52] *OECD Threshold Report*, *supra* note 17, 10.
[53] Hart-Scott-Rodino Antitrust Improvements Act of 1976, 15 U.S.C. § 18a (2021).
[54] *United States v. Bazaarvoice, Inc.*, No.13-cv-00133 (N.D. Cal. 2014).

competition from PowerReviews and achieve Bazaarvoice an unsurmountable market share in the R&R platform market and tip the market towards itself. Consequently, the District Court ruled in favour of the DoJ to divest the merged entity. The case *Bazaarvoice/PowerReviews* indicates that a two-fold threshold for notification is not capable to capture all potentially problematic mergers. Secondly, as to jurisdictions that subject to competition agencies' discretion to screen relevant transactions, the legal certainty may be better placed in crafting criteria based on which to trigger authorities' filing requests. Specifically, proxies that can indicate the magnitude of the transaction should be supplemented, .

D. Remarks

In light of the above, in digital industries, the turnover is not the aim to run the business at the early stage of nascent online platforms, a turnover-based threshold may not be able to function as effectively as for mergers in traditional markets. Whereas whether it should thus be amended is another matter. First, though the conceivable metrics like market share and transaction value-based threshold may compensate the downside of the turnover-based threshold, both of them have respective deficiencies in practical application. Second, a dual-notification-threshold scheme does not render an impeccable notification scheme that encapsulates all potentially anti-competitive mergers of platforms and guarantee full legal certainty. And more notably, whether a jurisdiction's notification threshold should be adapted should depend upon its specific situation. Jurisdictions may weigh up the pros and cons of their perceived metrics against the existing threshold. But what should bear in mind is that, for jurisdictions where wide discretion is given to their competition agencies for tackling with those non-reportable mergers triggered by tech giants, clearer proxies like number of users, DAUs of the parties that are indicative of magnitude of the mergers should be supplemented, so as to make it transparent about under what circumstance such mergers need to make an *ex-ante* filing and thus ensure the legal certainty of their merger control schemes.

III. MARKET DEFINITION

After having identified a filing obligation, defining relevant markets is the first issue touching upon material facts the case. It helps confine the competition landscape of merging parties so as to lay a basis for analyzing competition effects of merger. To define the relevant market remains a necessity in conducting competition analysis.[55] But peculiar characteristics of the digital markets have posed new challenges in defining markets for online platforms, which for example led EU to evaluate any need to adapt its current Market Definition Guideline.[56]

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[55] E.g. European Commission, *Commission Notice on the Definition of Relevant Market for the Purposes of Community Competition Law*, ¶ 2 (1997) (Eur.) [hereinafter *Market Definition Notice*]; *See also* China SAMR, *Jingyingzhe Jizhong Zanxing Guiding (经营者集中审查暂行规定) [Interim Provisions of the Review for Undertakings' Concentration]* § 12(2) (2020) (China); Case T-62/98, *Volkswagen v. Commission*, 2000 E.C.R. II-02707, ¶ 230 (Eur.).

[56] European Commission, *Evaluation of the Commission Notice on the Definition of Relevant Market for the Purposes of Community Competition Law,* (2020) (Eur.) [hereinafter *Market Definition Consultation Notice*].The result of such evaluation has been released on 12 July 2021, European Commission, *Commission*

A. How to Define A Multi-Purpose Market?

As described in the introduction part, it is common that many platforms offer products across various sectors. But generally a defined product market embraces the kind of products serving the same or substitutable purpose, so how to define markets for such "multi-purpose" online platforms poses a conundrum.

The German case *Karstadt/Kaufhof*[57] concerning an offline "multi-purpose" platform may offer some insights. When confronting a merger between two department store chains, BKA defined retail markets for around 20 product categories and conducts competition analysis separately.[58] As it was discerned by the BKA that the product categories concerned face competitive pressure from online sales to a varying extent, for instance, the clothing faces more competition but the luggage faces less. Therefore BKA maintained that a separately defined markets can comprehensively lay out competition landscape for different kinds of products sold by the department store chain.

Franck and Peitz are sided with the BKA's above approach. They hold that each category of products concerned on a multi-purpose market should be defined separately.[59] In an instance, Amazon as an online marketplace provides a broad range of products. If a customer wants to buy a book online, Amazon, eBay, Google Shopping or other online stores offering books all can be his/her options. It indicates that different product categories may differentiate themseleves in specific market circumstances. As such, for resulting in holistic market analysis, Franck and Peitz advocates to define separate markets for each product category.[60]

But a different approach is adopted by China SAMR in its decision over *Alibaba Exclusive-Dealing Case*[61] and in some antitrust investigations targeting previous mergers between online platforms that did not filfill their filing obligation. In this *Alibaba* case, the SAMR defined a comprehensive market for Alibaba's online retail platform, i.e. online retail service platform market, without segmenting the market by suppliers' categories (i.e. businesses or individuals), by sales channels, or by products' categories. In other investigation case, a market - online local life services market (online to offline stores) comprising extensive online local day-to-day services - is rendered as an intermediary platform that offers a wide scope of products/services (including taxi-hailing, online retail

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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 (2021) (Eur.) [hereinafter *Market Definition Notice Evaluation Results*], https://ec.europa.eu/competition-policy/system/files/2021-07/evaluation_market-definition-notice_en.pdf.)

[57] BKA Decision, CASE No. B2-106/18 *Karstadt/Kaufhof* , Nov.9, 2018 (Ger.).

[58] *Id*.

[59] Jens-Uwe Franck & Martin Peitz, *Market Definition and Market Power in the Platform Economy*, Ctr. on Regul. in Eur. (CERRE) Rep., 58 (2019).

[60] *Id*.

[61] China SAMR Decision, No.[2021]28 *Alibaba Jituan Konggu Youxian Gongsi Zai Zhongguo Jingnei Wangluo Lingshou Pingtai Fuwu Shichang Longduanan Xingzheng Chufa Juedingshu He Zhidaoshu* (*阿里巴巴集团控股有限公司在中国境内网络零售平台服务市场垄断案行政处罚决定书和指导书*) *[Penalty Decision and Guidance on Alibaba Group's Abuse of Dominance in Online Retail Services Platform Market in China]*, Apr.10, 2021 (China) [hereinafter *Alibaba Exclusive-dealing Case*], http://www.samr.gov.cn/fldj/tzgg/xzcf/202104/t20210409_327698.html..

services, house-cleaning services, etc.). It can be seen that China SAMR opts to define an entire market for an online multi-purpose platform. This approach is readily workable in practice but brings up an important question that how to circumscribe the multi-platform's competitors appropriately. Should only other platforms covering similar scope of services are competitors, or should other suppliers serving on a niche market that compete with one kind of products on the concerned multi-platform be also included, or a combination of both? If it were the combination option, should not such an approach render a market too broad to underestimate the undertaking's market power?

In this regard, for now it may not be able to arrive at a definite conclusion on in which way the multi-purpose market should be defined. Since for regulators, a separately-defining approach may be holistic, but its downsides lie in (i) it is inferior to indicate the market force of the platform as a whole. For instance, Amazon or Alibaba stands out as an online retail service platform as a whole, while maybe insignificant in some niche markets. Thus solely analyzing the market force on niche markets may damage the substantive competition analysis; (ii) it would be onerous to obtain market shares data for each niche market thus render the review process stuck. For practitioners, the entirely-defining approach is efficient, but difficulties may arise in identifying right competitors, otherwise risking largely broadening the market and underrating actual market power of the multi-purpose platform owned by merging parties. As such, a balance needs to be reached for the consideration of both approaches.

In this regard, this section proposes that, to define an entire market for the multi-purpose platform and top-popular (e.g. the top five) niche markets served on the platform. On the one side, this allows the regulators to evaluate the market power of merging parties' platform as a whole and most popular services thereon, It is also efficient for practitioners to define each market and procure relevant market share data; on the other, it lessens the risks in enlarging the market size and underestimating the market force of the concerned multi-purpose platform. As for the entire market, the market size may just incorporate the like multi-purpose platforms, and the niche markets would count the like sole-purpose platforms.

B. Define the Market for Platforms by Single- or Multi-Markets Approach?

Another conundrum occurring in market definition phase is to define a single-market or multi-markets for an online two- or multi-sided platform, i.e. to separately define markets for each side of the platform or to define a market for the platform as a whole. If the latter is pursued, the links between cross-sides thereof should be factored in when assessing market definition.[62]

Franck & Peitz lean towards the multi-market approach for defining markets for multi-sided platforms, and critically analysed Filistrucchi et al's approach that is a single-market for transaction/matching platforms; multi-market for non-transaction platforms. Overall, they hold that it should always be the multi-market approach to be adopted to define markets for two- or multi-sided platforms. Two primary infirmities identified by Franck and Peitz in their examing Filistrucchi et al's approach are laid out hereby.

[62] Franck & Peitz, *supra* note 59, 24.

The first is the bypass problem as a result of the failure to capture transactions made by customers to circumvent the platform.[63] For instance, a tourist may make use of the hotel booking platform to find an optimal hotel and then directly book through the hotel. As such, the platform operators may not be able to count the fraction of such transactions exploiting its matching services.[64] From a practical perspective, the missing out of this amount of transactions will affect the size of a market if to be culculated based on transaction-volume, and thus understate the market power of the concerned platform.

The second is the neglection of substitutes of each side of the online platform, which according to Franck and Peitz arises from two facets. One is the excluding non-transaction markets substitutable to transaction markets. In an example, some intermediary platforms have customers complete their transactions directly on their portals, while some others direct customers to the merchant's website, and they actually provide similar services from a demand-side angle. The other is the excluding options of customers on one side of the platform. Take the ride-hailing platform to illustrate. If to define a ride-hailing service market, it is of likelihood that substitutes of the passenger side possibly exerting competition pressure may be ignored. Besides ride-hailing services, other transportation means like taxi, public transportation is also available to customers, which will diverge the passenger flow from ride-hailing services.[65] As such, they view that this may risk in ignoring close substitutes that would narrow down the size of the relevant market and entail an erroneous competition analysis. In terms of the above reasons, a multi-market approach is deemed by Franck and Peitz as the most suitable approach to define markets for online platforms in almost all circumstances.

The multi-market approach has the advantage to analyse the competition landscape thoroughly where the online platform is active. But it is not always the optimal choice. To always define each side of the platform may not be that viable in practice as it seem to be, and importantly, it may encompass substitutes of less comparability into the market and thus cause the relevant market rather broad whereby suggesting an underestimated market power of the concerned platform.

First, the market size is be hard to measure if all seemingly possible substitutes should be incorporated. Still take the ride-hailing service as an example. If regarding traditional taxi service or public transportation as its substitutes, then ride-hailing services and taxi/public transportation should be in the same market. For the ease of illustration, we here presume this is "a mobility service market". But the question arises that by what metric should the market be measured? To calculate the frequency of passengers taking taxi or public transportation services would also be difficult. Second, from a demand-side perspective, ride-hailing

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[63] *Id*., at 25.
[64] *Id*.
[65] *Id*., at 26; *See also See also* Cristina Caffarra & Oliver Latham, *Pros and Cons of Market Definition*, Annual Konkurrensverket Conf. Stockholm (2017), at 15, https://www.konkurrensverket.se/globalassets/english/research/pros-and-cons2017_5-cristina-caffarra.pdf. (they give an example to illustrate that London's subway service would lead to far fewer Uber trips from central stations). (they give an example to illustrate that London's subway service would lead to far fewer Uber trips from central stations).

services and taxi/public transportation services look substitutable. However, they are not necessarily so from a supply-side perspective if taking into switching cost and legal barriers into consideration, rendering them of less comparability to ride-hailing services. Third, as mentioned afore, this approach that covers all options available to customers may broaden the market and hence play down the market status of the concerned ride-hailing platform, to the detriment of an objective description of its market power.

The above indicates that a multi-market approach may not always be applicable properly. Having regard to the deficiencies as found by Franck and Peitz in the Filistrucchi's approach, i.e. single-market for transaction platforms, multi-market for non-transaction platforms, I would like to suggest, without drawing a line between transaction and non-transaction markets, placing focus on whether groups of users on both sides are necessarily connected for the supply of the service; if so, a single-market approach is appropriate, and conversely, a multi-market approach, such as for an attention platform.[66] Since as noted by Wismer & Rasek to OECD, "[d]efining separate markets for each customer group may be inappropriate if the different groups are inseparably linked by a platform interaction, in particular if a platform's service necessarily involves all customer groups.", which possibly leads "the competitive analysis to be done repeatedly without gaining additional insights if the set and the relevance of competitors as well as the geographic scope do not differ across market 'sides'.", and risks in missing network effects derived from the interdependence between different customer groups.[67] This approach also aligns with EC's newly released Market Definition Notice Evaluation Results, which recognizes that a distinction may not be drawn between defining a single market for transaction platforms and defining separate markets on each side for non-transaction platforms; instead, the focus should place in the platform typology and the business model, i.e. how the two sides interact.[68]

The above suggested approach has been observed in practice by competition agencies in distinct jurisdictions.

The Netherlands

In the Dutch case *Funda Real Estate* ("Funda"),[69] the Dutch Court determined a real estate site for the purpose to find out whether Funda, as an online intermediary that connects house seekers and real estate agents, abuses market dominance. The defined real estate site is a single market. First, it is indicative that without the participation of the house seekers, the activities of real estate agents would be meaningless, and vice versa. Second, the Dutch Court's decision pointed out that relying on views from literature and the working paper of

[66] This approach is actually aligned with Lapo Filistrucchi, Damien Geradin, Eric van Damme & Pauline Affeldt, *Market Definition in Two-Sided Markets: Theory and Practice*, 10(2) J. of Competition L. & Econ., 293, 303 (2013); *See also Wismer & Rasek's Note to OECD*, *supra* note 3, 5-6.
[67] *Wismer & Rasek's Note to OECD*, *supra* note 3, 4-5.
[68] *Market Definition Consultation Notice*, *supra* note 56, 54.
[69] CASE C/13/528337/HA ZA 12-1257 *Funda Real Estate*, 2018 Rechtbank Amsterdam [Ct. of Amsterdam], ECLI:NL:RBAMS:2018:1654 (Neth.), https://linkeddata.overheid.nl/front/portal/document-viewer?ext-id=ECLI:NL:RBAMS:2018:1654.

the BKA[70] were not always doable for practice. The Dutch Court did not make a distinguishment between transaction (matching) and non-transaction markets, but catered to the case facts. Since not only transaction services are provided by Funda, non-transaction services regarding the facilitation between tenants and landlords are also served.[71] It can be seen that for a real estate platform that necessarily needs two groups of users (i.e. real estate agents and potential buyers) on board, a single market is defined.

The U.S.

A representative American case is the Ohio v American Express Co.[72] The U.S. Supreme Court took the groups on opposite sides (i.e. merchants, and customers who use credit-card to finish payments) as closely linked to each other and decided a single credit-card market, with the reasoning that "[t]wo-sided transaction platforms, like the credit-card market . . . facilitate a single, simultaneous transaction between participants . . . Whenever a credit-card network sells one transaction's worth of card-acceptance services to a merchant it also must sell one transaction's worth of card-payment services to a cardholder."[73]; and "[B]ecause they cannot make a sale unless both sides of the platform simultaneously agree to use their services, two-sided transaction platforms exhibit more pronounced indirect network effects and interconnected pricing and demand. Transaction platforms are thus better understood as supplying only one product - transactions.", therefore, "[i]n the two-sided transaction markets, only one market should be defined."[74]

China

In China, in *Qihoo v Tencent Antitrust Case*[75], when facing platforms providing internet application services (including QQ (an instant communication platform like Whatsapp), Weibo (a micro-blogging site like Twitter) and internet games) on one side, and advertising services on the other side, the China Supreme Court found the needs on users and advertisers' sides were not closely correlated. In the market definition analysis, a multi-market approach can be implied.

The China Supreme Court reasoned that the focal point thereof was "[w]hether the competition between online platforms vying for users' participation on one side and advertisers on the other can completely overlook the restraints derived from the characteristics of products or services and such competition can exert adequately significant constraints on each side." In order to answer this, the China Supreme Court noted that, first, the key for competition was the services/products offered by platforms. Second,

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[70] BKA, *Working Paper, The Market Power of Platforms and Networks*, at 28 (2016) [hereinafter *BKA Working Paper*] (It provides that "[a] single market definition would be suitable for matching platforms if user groups essentially have the same need for liaising with the respective other group, and therefore, the group's views regarding substitutability of function do not differ substantially").
[71] Daniel Mandrescu, *Online Platforms and Abuse of Dominance – the Case of Funda Real Estate,* Lexxion (2018), https://www.lexxion.eu/en/coreblogpost/online-platforms-and-abuse-of-dominance-the-case-of-funda-real-estate/.
[72] Ohio v. American Express Co., 585 U.S. __ (2018).
[73] *Id*., at 9.
[74] *Id*.
[75] *Qihoo v. Tencent Antitrust Case*, 63.

services/products supplied on the internet application side were distinctive in terms of nature, characteristics, functions and applications. Albeit advertisers were indifferent about differences in characteristics or nature of the offerings on the internet application side, they were concerned principally about the prices and effects of the advertising service. In this sense, as for advertisers, it was plausible to define the market as an internet application platform covering both sides thereof; but for the users who use free of charge services were less likely to switch to another offering with totally different characteristics or functions. For example, a user seeking a book online would opt for a search engine rather than instant communication services. Third, key products or services offered by online platforms should determine the particular customer groups that they compete for, resulting in appreciable differences in profit-earning models. Lastly, this case focused on whether Tencent had leveraged and extended its market power in instant communication service to impede competition in internet security software field, meaning that such behaviour shall occur primarily on the users' side. Thus to define an internet application platform covering broad internet-based services like search engine services would exaggerate other online platforms' potential competition constraints in the instant communication services and downplay actual market power of Tencent. In the light of the above, the China Supreme Court deemed that it was not possible to define an internet application services market covering both sides, particularly from the perspective of users side. The above reasoning indicates that the China Supreme Court, in this case where a platform links not-closely-interacted groups of customers, opted for a multi-markets approach.

The EU

In *Travelport/Worldspan*[76], EC defined the relevant market as the electronic travel distribution services provided by a Global Distribution Service (GDS) platform, indicating a single-market logic. The electronic travel distribution services provided by GDS match needs from travel service providers ("TSPs") and travel agents ("TAs").[77] Though it took both sides thereof in a vertical relationship, i.e. upstream for TSPs supplying travel content, and the downstream for TAs, it actually viewed the electronic travel distribution services provided by GDS as an intermediary service market that necessarily facilitates the demands from both of groups.[78]

EC followed a multi-market approach handling with platforms providing services where customers/users are loosely connected. For instance, in *Facebook/Whatsapp*, for the users side, it distinguished the markets as "consumer communications services" and "social networking services"; for the advertisers on the other, a market of "online advertising services" was defined.

Germany

[76] European Commission Decision CASE COMP/M.4523 *Travelport/Worldspan*, Aug.21, 2007, C(2007)3938 (Eur.).
[77] *Id*., ¶¶ 9-11.
[78] *Id*., ¶ 11.

In *Immonet/Immowelt*[79], the BKA defined a single market for real estate platforms. The BKA noted that users on both sides (real estate agents and potential buyers) essentially had the same needs and "[t]he intermediation and matching services provided by the platform was essential for both sides, so that in all scenarios with conceivable intermediation substitutes both user groups would eventually "come across" one another again."[80] In an online dating platforms case[81], a single market was also defined, given that online dating platforms facilitate interaction between two user groups (men/women) and hence always are in need of bringing the two user groups on board. And it viewed that a distinction in needs between two groups of users on the platform should not be made.[82]

It can be seen from the above-listed cases that in practice, both single-sided and multi-sided approaches have been deployed to define markets for online platforms. Instead of taking a one-size-fits-all approach, competition authorities rely on a case-by-case analysis with taking into account the interdependence of both sides of the platforms in the market definition to decide a single- or multi-markets to be defined.

C. Putting Less Weight on Market Definition

The market definition circumscribes a competition landscape, including the market status of a concerned undertaking and its competitors. Nonetheless, the market definition may play less of a role in digital markets, as digitalization of business models blurs the market boundaries.[83] From a functionality perspective, whether products/services of similar functions should be incorporated in the same market casts doubts. Take the social networking service as an example. Tiktok's short video platform also allows users to socialize. But whether it is a competitor with Facebook in the same market is obscure, since if affirmative, the social network market where Facebook is entrenched may be widely enlarged. In addition, the accumulated vast users and users' data enable large digital platforms (like GAFAM) to easily expand their business into new markets. This is in particular relevant to the consideration on supply-side substitutability.[84] If such large players would be regarded as potential competitors, it runs the risk of exaggerating the competition constraints faced by the merging parties.[85]

In light of the above, I hold the view that less importance should be attached to market definition in digital times, and attention should be switched to the substantive analysis.

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[79] BKA Decision CASE No.B6-39/15 *Immonet/Immowelt*, June 25, 2015 (Ger.), https://www.bundeskartellamt.de/SharedDocs/Entscheidung/EN/Fallberichte/Fusionskontrolle/2015/B6-39-15.pdf?__blob=publicationFile&v=2.

[80] *BKA Working Paper*, *supra* note 70, 31.

[81] BKA Decision CASE B6-57/15 *Oakley Capital/EliteMedianet*, Mar.31, 2015, ¶¶ 71-78, https://www.bundeskartellamt.de/SharedDocs/Entscheidung/EN/Fallberichte/Fusionskontrolle/2016/B6-57-15.pdf?__blob=publicationFile&v=2>.

[82] *BKA Working Paper*, *supra* note 70, 31.

[83] OECD, *Abuse of Dominance in Digital Markets*, 10 (2020), www.oecd.org/daf/competition/abuse-of-dominance-in-digital-markets-2020.pdf.

[84] European Commission, *Summary of the stakeholder consultation to the Evaluation of the Market Definition Notice*, 9 (2020), https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=PI_COM:Ares(2020)7730543&from=EN.

[85] As also acknowledged in the *Market Definition Notice Evaluation Results*, *supra* note 56, at 54 ("[m]arket definition's application in digital context may lead to additional complexities.").

In all, as the ICN points it out, "[m]arket definition is not an end in itself, but rather a step which helps in the process of determining whether the merged entity possesses, or will, post-merger, possess market power".[86]

IV. MARKET SHARE

Market shares are regarded providing useful indications of the market structure and the status of the merging parties.[87] This section firstly discusses about issues in calculating and applying market shares data in practice.

A. Network externalities may be considered but in what circumstances?

As widely acknowledged, sides of internet platforms are inextricably connected, wherein no separately defined market on a platform should be assessed without factoring in its intersection with users on the other side.[88] But it does not mean that in all circumstances network effects shall be counted in assessing market shares for platforms.

First, for platforms defined by the single-market approach, to involve network effects may not add much value but instead may complicate the market share computing process. As indicated above, groups of users on platforms defined by the single-market approach are closely connected. It means that the size of userbase on one side would inevitably affect that on the other side (e.g. drivers and passengers on a ride-hailing platform). Accordingly, to calculate number of users on each side individually in order to evaluate its relevance on the other side would not be meaningful.

Second, for platforms defined by the multi-market approach, since two sides thereof are separately defined and thus as a corollary market shares of each market needs to be calculated. But only the side that is substantially affected by the fluctuation of the number of users on the other side may need consider the network effects.

In *Microsoft/Yahoo!*, for the relevant online advertising services market, EC measured market share simultaneously of both the user side and advertiser side.[89] The search engine of Microsoft connects advertisers and users on both sides. Thanks to indirect network effects, the advertisers would be enticed to the search engine platform if there are a great number of users using general search services thereof. Therefore, in the assessment of competition landscape in the online advertising services market, EC first examined the user-side for evaluating its ability to generate search traffic, and second examined on the advertising side about its abilities to monetize its search traffic through its advertising services. And in this process, EC assessed market shares data on both the internet search service side the advertiser

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[86] Int'l Competition Network ("ICN"), *ICN Merger Guidelines Workbook*, 15 (2006), https://www.internationalcompetitionnetwork.org/wp-content/uploads/2018/05/MWG_MergerGuidelinesWorkbook.pdf.

[87] *Council Guidelines on the Assessment of Horizontal Mergers under the Council Regulation on the Control of Concentrations between Undertakings*, 2004 O.J. (C 031) ¶ 14 [hereinafter *Horizontal Mergers Guidelines*].

[88] Viktoria HSE Robertsonm, *Delineating Digital Markets under EU Competition Law: Challenging or Futile*, 12(2) Competition L. Rev. 131, 137 (2017).

[89] European Commission Decision CASE COMP/M.5727 *Microsoft/Yahoo!,* Feb.18, 2010, C(2010) 1077, ¶¶ 101-08 (Eur.).

side.[90] With such analysis, EC arrived at the conclusion that "[t]he combined market share of Microsoft and Yahoo are well below safe harbour of the horizontal merger guidelines".[91]

EC accounted for network effects in assessing market shares of the online advertising services market. But it is witnessed that, in the online advertising services, network effects manifestly flow just in one direction (from the user side to the advertiser side but not vice versa), given users' antipathy towards the constantly-popping-up adverts on search result pages. It indicates that for the side on which customers are substantially affected by users on the opposite side, the market share thereof can be indicated by that on the other side. Even if market shares on the advertising service market are transitorily low, a high market share on the other side hints that advertisers may be attracted to the platform in a short period of time and thus lifts market shares on the advertising service. But for markets like search engine services where users' volume would not surge resulting from the increases of advertisers, it may not add much value to assess market shares on the advertising for evaluating that on the search engine. As such, it is suggested that for the side/market substantially swayed by the users' number on the opposite end, it would be helpful to synchronously assess market shares on the other side.

B. Less significance should be attached to market shares

Market shares has endogenous infirmities in appraising market power[92], which have become particularly sound in the digital platform setting.

First, to identify an optimal metric for calculating market shares for digital markets, especially the side serving users free of charge, is thorny; but even if the parties or authority can decide an optimal metric, to obtain market shares data based thereon may not be viable. For instance, in *Facebook/Whatsapp*, EC defined a relevant market as consumer communication services. The merging parties initially submitted a dataset of market shares based on the installation of consumer communications apps on iOS and Android smartphones for a certain time period.[93] However, EC identified that this metric would emcompass both active and inactive users, of potential to broaden the market size and thus to underestimate the market position of merging parties.[94] It further added that this proxy was of likelihood to overestimate the market power of smaller market players because of figuring in users using an app just once in a month.[95] It also rejected the proposal proposed by third parties of using monthly minute-based metric given that it implicates exogenous factors particularly the relationship among the users indicating that family members or friends would certainly spend more time on the app, and stressed that what mattered was not the length of the communications itself, and the users' engagement with a service would be better

[90] *Id*., ¶¶ 102-04, 106-08.
[91] *Id*., ¶ 130.
[92] Louis Kaplow, *Market Definition, Market Power*, Int'l J. of Indus. Org. 148, 159-60 (2015) (Kaplow points out that either from the perspective of empirics or policy, market share has infirmities in indicating the degree of market power).
[93] European Commission Decision CASE COMP/M.7217 Facebook/Whatsapp, Oct.3, 2014, C(2014) 7239 (Eur.), ¶ 97.
[94] *Id*., 17 n.44.
[95] *Id*., 17 n.45.

demonstrated by users' actual uses of per month or number of messages sent on a service.[96] Nonetheless, EC acknowledged the difficulties to collect the data as such, including the lack of such data and the inconsistent computing methods (e.g. number of messages sent, messages received, group messages, etc.), and had to accept the data submitted by the merging parties as it was the best available (though imperfect) at that time point.[97] The rationale of the EC in *Facebook/Whatsapp* to decide which metric to be deployed to compute market shares of the consumer communication service demonstrate the dilemma confronting authorities. A less considerate choice could lead the overestimation of market share of smaller competitors, but the optimal one may not be pragmatic to be obtained. This may have authorities compromise for a less ideal metric given its availability, but leaving thoughts about the meaning of market shares if they cannot reflect market power correctly, and another question thus ensues that whether the request for market share data would still be necessary in digital era. As hinted in EC's statement in *Facebook/Whatsapp*, "[I]n any event, the Commission notes that irrespective of the methodology used for calculating market shares, Facebook Messenger and WhatsApp would still be number 1 and number 2 in the EEA and at worldwide level",[98] and "[t]he consumer communications sector is a recent and fast-growing sector . . . in which large market shares may turn out to be ephemeral . . . this market high market shares are not necessarily indicative of market power."[99]

In addition, the ever-blurring boundaries of markets in digital era could may lead to the market shares less reliable.[100] The market share is calculated based on market definition, which as stretched above faces a number of conundrums to define accurately. Take the Tiktok as an example, on its short video platfform, it also functions on social networking and online advertising. Since on one hand, audience can directly interact with Tiktokers or other audiences, on the other, merchants utilize Tiktok to propaganidize their products/services. And there are other online platforms serving the similar functions. However, in evaluating the market size of social networking services or online advertising services, whether Tiktok and other such platforms' active users volume should be counted in invites further concerns. Since this will inexorably enlarge the market size and underestimate market players that have long entrenched positions, but if not, the market compeition analysis may overlook such competition constraints. This concern has already been raised in *Facebook/Whatsapp*. As regards the market share data submitted by the merging parties, EC commented that "[t]he Parties have included players which offer communications functionalities integrated in their social networking apps, such as LinkedIn and Twitter, regardless of whether the app was used for communication purposes or not."[101]

Questioning the necessity of market shares for dynamic markets has been observed in a number of cases by distinct authorities. In *Microsoft/Skype*, EC pointed out that market

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[96] *Id*., ¶ 97.
[97] *Id*., ¶ 98.
[98] *Id*., 17 n.45.
[99] *Id*., ¶ 99.
[100] Viktoria HSE Robertsonm, *Delineating Digital Markets under EU Competition Law: Challenging or Futile*, 12(2) Competition L. Rev. 131, 137 (2017).
[101] *Facebook/Whatsapp*, 17 n.45.

shares only had a limited role in a rapidly innovative market.[102] This proposition was affirmed by the European General Court in *Cisco Systems v European Commission* that "[i]n such a dynamic context, high market shares are not necessarily indicative of market power."[103] China Supreme Court, in *Qihoo v Tencent Antitrust Case*, similarly viewed that "[i]n particular, owing to the highly dynamic feature of the internet realm . . . the role of market share cannot be overestimated; whilst more weight should be put on factors of market access, undertakings' market behaviours, other facts and evidence relevant for judging the market position."[104]

V. SUBSTANTIVE ASSESSMENT

Substantive assessment lies in the core throughout the merger control scheme. The foregoing steps are to serve the substantive analysis of the concerned merger on market competition. Particularly in digital era, as market definition and market shares' role may see an eclipse, the substantive assessment stands out more important.

A. Concerns Arising from Peculiar Features of Digital Markets

1. Whether network effects would lift market entry/expansion barrier post-merger

As introduced in introduction section, network effects (either direct or indirect) on the one hand could help nascent digital market players accumulate users at an exponential speed and thus grow into a sizable competitor in a relatively short period. On the other, network externalities are likely to increase market concentration.

Users on the two sides of the platforms are intersected inevitably. This also holds true for network effects flowing only in one direction,[105] say Google's internet search services. Not only advertisers need users using Google's searching services as their ads' audience, users also intrinsically need the advertisers engage in the other side. Since the free-of-charge services enjoyed by users are under the auspices of the advertisers. As such, an internet platform is valuable and sustainable only if having a sufficient number of users of both sides on board. In this sense, if an incumbent enjoys network effects of magnitude, it would have natural edges in comparison to nascent competitors, and thus likely hinder entrants entering the market.

The effects of an enhanced market barrier have been acknowledged in Google Search (Shopping). As for Google's search engine platform, relevant markets include (i) general search services, and (ii) online search advertising services, which are benefited from positive

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[102] *Id*.; *See also* European Commission Decision CASE COMP/M.6281 *Microsoft/Skype*, Oct.7, 2011, C(2011)7279, ¶ 109 (Eur.).
[103] Case T-79/12, *Cisco Systems v. European Commission*, ECLI:EU:T:2013:635, ¶ 69 (Dec. 11, 2013) (Eur.).
[104] *Qihoo v. Tencent Antitrust Case*, 44.
[105] It is mentioned in the afore 'market share' section. Like the search engine platforms, advertisers would be attracted hereto if there are sufficient users on the other side; but it is not the case for users using the internet search services, because they are much less interested or even antipathetic to constantly popping up adverts on their search result pages. As a result, the indirect network effects only flow in one direction (i.e. from the internet search users to the advertisers, but not the other way around).

feedback loops of network externalities.[106] Direct network effects stemmed from the fact that with more users entering queries through Google, Google's search services became more appealing to their peers, because of (i) the trust held by users aware of their peers being using it, and (ii) the search services *per se* to be refined by improved relevance thanks to the algorithm, also called as data network effects.[107] On the other hand, along with the users' increase, indirect network effects were intensified, appealing to advertisers to join the other side of the platform. The confluence of direct and indirect network effects therefore has helped Google accrue a strong and consolidated customer base, and put it at an appreciable advantage to its competitors. As a result, Google's market position intimidated new market players to enter the markets. As concluded by EC, "[G]oogle has enjoyed strong and stable market shares by volume across the EEA since 2008, and there has been no effective entry in any EEA countries during that period."[108]

Nevertheless, in a large number of previous merger cases, competition agencies seem to have been relatively conservative towards network externalities in enhancing market entry barrier. Amongst mergers of horizontal nature, a representative case is *Facebook/Whatsapp*, where the identified overlapped product market is the consumer communication services.[109] In the appraisal of network effects on competition post-merger, apart from other factors (e.g, the dynamics of internet business, other significant competitors) assumed with possibilities to offset the adverse effect, EC in particular examined whether the transaction would lead to any merger-specific substantial strengthening of network effects.[110] Allied with technical difficulties faced by the merging parties in the integration of users of the merging parties, its concern as such was assuaged by the limited aggregation of userbase post-merger. EC identified that pre-transaction, there had already been a significant overlap between the networks of Whatsapp and Facebook.[111] As a consequence, EC concluded that "[t]he pre-existing network effects would be unlikely to be substantially strengthened by the transaction."[112]

But the proposition that the limited aggregation of userbases would not substantially strengthen network effects may call for a second-thought. A query arises that whether likelihoods exist that network externalities would still be enhanced in cases where the merging parties already have pre-overlapped users? Prat and Valletti posit that, restriction on competition grows where the rate of consumer overlap between merging firms increases, i.e. the larger consumer overlap, the more detrimental to competition the merger would be;[113] and the ability of the merged entity to restrict "output" (advertisers' access to consumers)

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[106] European Commission Decision CASE AT.39740 *Google Search (Shopping)*, June 27, 2017, C(2017) 4444, ¶ 154 (Eur.).
[107] *Id*., ¶¶ 287, 312.
[108] *Id*., ¶ 274. (Even speaking to the only viable competitor Bing of Microsoft, the Commission noted that Bing had never occupied a market share more than 10%).
[109] *Facebook/Whatsapp*, ¶ 84.
[110] *Id*., ¶¶ 131-36.
[111] *Id*., ¶ 140.
[112] *Id*.
[113] Andrea Prat & Tommaso Valletti, Attention Oligopoly, Am. Econ. J. (forthcoming), at 20 (2018), https://ssrn.com/abstract=3197930.

depends on the overlap between the merging firms.[114] This stance is backed in *CESifo Working Paper* pointing out that "[m]erger between two networks offering different products to the same user groups can be used to substantially restrict competition on the market, even if the products offered to capture consumer attention are different."[115] It is plausible to envisage that users may stick more to one platform because post-merger products previously provided by separate firms would be offered by a single firm. This may result in users' gravitating around the merged entity and hence reinforcing the network effects on the platform that may lead to lock-in effects and lift market entry barriers.

For mergers of non-horizontal nature, though not explicitly, network effects' role in generating positive feedback loop have been considered by competition agencies in some cases, instantiated by *Daimler/BWM/Car Sharing JV* [116] reviewed by EC, and *Telecinco/Cuatro*[117] reviewed by Spain CNC. It is inferred from the substantive assessments and resultant remedies that network effects were accounted with care, and partially resulting in the remedies imposed by EC and CNC, respectively.

In *Daimler/BWM/Car Sharing JV*, a vertical relationship was identified, i.e the upstream multimodal platform ("moovel", a self-owned multimodal platform of Daimler, allowing users with access to a wide range of mobility offerings), and the downstream market was the (free-floating) car sharing market. EC was concerned that, post-closing, the parties would have had the ability and incentive to promote their own (free-floating) car-sharing services and multimodal platform by way of (i) customer foreclosure: foreclosing competing car-sharing services providers' access to their "moovel" multimodal platform, which was recognized as a critical gateway for mobility services providers to be visible to customers,[118] and (ii) input foreclosure: foreclosing competitive multimodal platforms by keeping them from the parties' APIs that were essential for displaying the parties' car sharing services on their platforms.[119]

In this case, a multimodal platform like "moovel" is a two-sided market with mobility services providers on one side and customers on the other. It is indicated from EC's appraisal that network effects has contributed to the concern of input foreclosure. In order to allow other multimodal platforms to compete viably with "moovel", credible mobility services providers needed to woo customers. In this regard, the parties' car-sharing services were acknowledged by their competing multimodal platforms as essential. That being said, if post-closing the parties refused to list their car-sharing services on rival multimodal platforms by way of denying their APIs, customers on the other side of the platform could be solicited away thanks to the cross-group network effects. Going further, owing to the network effects, the decrease of number of customers would disincentivize other mobility services providers

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[114] *Id*.
[115] Axel Gautier & Joe Lamesch, *Mergers in the Digital Economy*, at 6 (CESifo GmbH, Working Paper No.8056, 2020) [hereinafter *CESifo Working Paper*].
[116] European Commission Decision CASE COMP/M.8744 *Daimler/BMW/Car Sharing JV*, Nov.7, 2018, C(2018) 7527 (Eur.).
[117] Spain Comisión Nacional de la Competencia Decision [CNC] [Nat'l Competition Comm'n] Case C/230/10 *Telecinco/Cuatro*, Oct.28, 2010 (Spain).
[118] *Daimler/BMW/Car Sharing JV*, ¶¶ 311-18.
[119] *Id*., ¶¶ 319-23.

to remain on that competing platform, as a result, the competing platform could be marginalized from the market. Consequently, the competition in the multimodal platform would be softened and the market barriers to entry and expansion would thus be enhanced. In order to dissipate the input foreclosure concern, EC decided a remedy according to which the parties would guarantee competing multimodal platforms with necessary APIs access for their listing of and re-directing customers to the parties' car-sharing services.[120] This would allow the rivals with the opportunities to attract customers, so as to compete on the equal footing with the parties' JV, and alleviate the effects on lifting the market barrier to entry/expansion partly, if not wholely, attributed by network effects.

In *Telecinco/Cuatro*, the merging parties were leading market players of Spain's free-to-air television (FTA-TV) business at the time of merger. The CNC was concerned that the merger would have impacts on the entire value chain of the TV-related audiovisual sector, from the production of audiovisual content to the broadcast and to the end audience. This merger would have achieved the parties' horizontal aggregation in the acquisition of audiovisual content market, which, in turn, would give rise to the competition concerns arose from the adjacent relationship between the TV advertising market and the acquisition of audiovisual content market.

The marketing of audiovisual content is of vital importance for competing in the TV advertising market, since contents are necessary inputs for offering an appealing programming to attract subscribers of viewers that attract advertisers.[121] As in the TV advertising market, the advertising is dependent on audience ratings where the free-to-air broadcasters' capacity to attract TV viewers plays a crucial role. With the aggregated market power in the acquisition of audiovisual content market, it can be indicated that the merged entity would be able to attract a larger scale of audience. This, in turn, would fortify the merged entity's position in the TV advertising market, thanks to the network effects thereof that would entice more advertisers flocking thereto, thereby likely rendering the merged entity a gatekeeper position.

In order to address this concern, amongst others, the CNC particularly imposed a remedy according to which "[T]eleccinco cannot sell in one commercial advertising package for the two FTA television channels with the largest viewer levels of those that it manages, with the added condition that the aggregate viewership for the TV channels included in each commercial package cannot exceed 22%".[122] It is discernible that this kind of remedy wielded the feature of network effects. Through ceiling the volume of audience traffic on one side of the advertising market, the appeal of advertising services to advertisers on the other side would decrease, and thus may curb merged entity's market power, and lower the market entry barrier in the TV advertising market.

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[120] *Id*., app. § B.
[121] *Telecinco/Cuatro*, ¶ 11.
[122] *Id*., ¶ 25.

2. Remarks

Network effects are a double-sword for platform competition. It speeds up nascent platforms to evolve into an appreciable market player to intensify competition, but it has the potential to raise the market barrier to entry/expansion thereby tipping the market towards a few incumbents. Nevertheless, in the context of merger control, the competition authorities seemed to have taken a conservative approach in assessing network effects' role in market competition post-merger.

Horizontally, though in *Facebook/Whatsapp*, EC did not view that the limited aggregation of userbases of parties would lead to the substantial enhancement of network effects, and overlooked the factor of users' stickness and ability of platforms to retain users may both be enhanced. For mergers of non-horizontal nature, despite competition authorities had dispelled their concerns arising from network effects in majority of cases, it is witnessed that positive feedback loop generated by network effects which would likely bring about a foreclosure effect or a market-tipping efffect have been factored in. Albeit implicitly, competition authorities have recognized that network effects are of likelihood to lift market entry/expansion barrier post-merger.

Nevertheless, it is notable that network effects could not be the decisive factor in the remedial outcome if to compare remedial cases with those unconditionally-cleared cases. Rather, other elements of the case, including the market feature (e.g. the market entry barrier is high) and the market status of the merging parties (e.g. whether it has a strategic role in the vertical chain as shown in *Daimler/BMW/Car Sharing JV*), play an important part as well. As such, it is not simply a yes-or-no answer to the question at the outset of this section. Network effects *per se* should not be abruptly labeled with "lifting market entry barrier". Its role in substantive analysis should be based on a case-by-case analysis.

B. Data's Role in Competition Analysis

Online platforms as a data-driven business model, one of its typical activities is to collect, analyse and then commercialise data.[123] Data thus are regarded as a competitive asset.[124] In view to utilising data for improving or designing better and innovative services, having control or harbouring voluminous data would vest online platforms with crucial competitive advantages.[125] This is particularly true for established platforms.[126] Their achieved scale economies, network effects and invested sunk costs in infrastructure (e.g. requisite hardware and software) have equipped them with abilities to gather and process data. Further, at bottom, large amounts of mergers of tech giants like Amazon, eBay and Google were driven to acquire data, demonstrating the magnitude of data's role in competition.[127]

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[123] German Monopolkommission (German Monopolies Commission), Special *Report 68: Competition policy - The Challenge of Digital Markets,* at 27 (2015).
[124] Terrell McSweeny & Brian O'Dea, *Data, Innovation, and Potential Competition in Digital Markets - Looking Beyond Short-Term Price Effects In Merger Analysis*, F.T.C. 2 (2018), https://www.ftc.gov/system/files/documents/public_statements/1321373/cpi-mcsweeny-odea.pdf.
[125] *Id*.
[126] Evans, *supra* note 14, 36.
[127] Wendy C.Y. Li, Makoto Nirei, and Kazufumi Yamana, *Value of Data: There's No Such Thing As A Free Lunch in the Digital Economy*, Research Inst. of Econ., Trade and Industry (RIETI) Discussion Papers 19022,

But specific to merger control, whether the acquisition of target's usersdata necessarily would give rise to competition concerns need further dissection.

1. Whether the acquisition of data would give rise to competition concerns?

Irrespective of horizontal or non-horizontal mergers, the acquisition or aggregation of data post-mergers would raise competition concerns only where the data constitutes an important, if not essential, input.[128] Albeit in academics and in practice, EC or other competition authorities have acknowledged data's importance, in the merger control context, competition authorities seem not to consistently hold that the acquisition of data would give rise to competition concerns.

In the merger between Google and DoubleClick, concerns arose that given the importance of data in the provision of the concerned online advertising service, the aggregation of the merging parties' data would confer Google with salient advantages against Google's rivals. Specifically, the collection and analysis of users' data were of critical importance in refining Google's search quality, which served the increase of the number of users of Google's online search services.[129] In turn, Google's customers on the online advertising service would grow due to the network effects' positive feedback loop.[130] Likewise, DoubleClick was a significant market player on the graphic ads market, relying on audience targeting mechanisms to help advertisers target their customers, which needed track users' internet trajectory.[131] It is thus not surprising to see that competitors was concerned concerns about this merger. Just one week following Google's announcement of its proposed acquisition over DoubleClick, the Electronic Privacy Information Center filed a complaint with Federal Trade Commission ("FTC") alleging that the merger "[w]ould concentrate a majority of the data necessary for the 'online targeted advertising' market in one company, creating numerous anticompetitive effects."[132]; some other competitors filed with FTC complaining that "the combination of Google's database of user information and the data respecting users and competitive intermediaries collected by DoubleClick on behalf of its customers would give Google an overwhelming advantage in the ad intermediation

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27-28 (2018) (The mentioned cases include, *inter alia*, Amazon/Zappos, Amazon/Twitch, eBay/PayPal, eBay/Skype, Google/Youtube, Google/DoubleClick and Google/Waze).

[128] *Horizontal Mergers Guidelines*, *supra* note 87, ¶ 71 (The mergers would enhance the market barriers to entry/expansion under the circumstance that it would make it harder for the merged entity to obtain the essential input); See also, *Council Guidelines on the Assessment of Non-horizontal Mergers under the Council Regulation on the Control of Concentrations between Undertakings Non-Horizontal Mergers Guidelines*, 2008 O.J. (C 265) ¶ 34 (2008) [hereinafter *Non-horizontal Mergers Guidelines*] (input foreclosure may raise competition problems only if it concerns an important input for the downstream product).

[129] Robert W. Hahn & Hal J. Singer, *An Antitrust Analysis of Google's Proposed Acquisition of DoubleClick*, IO: Regul., at 13 (2008); See also, Sergey Brin & Lawrence Page, *The Anatomy of a Large-Scale Hypertextual Web Search Engine,* 30 Computer Networks 107, 109 (1998) (The authors discussed about resorting to the collection of data and its magnitute to improve precision of search results and the use of vast amount of data to develop into academic realm. In all, the message conveyed therefrom is that the evolution of Google and its activities are data-intensive).

[130] Nathan Newman, *Search, Antitrust, and the Economics of the Control of User Data*, 31 Yale J. on Regul. 401, 404 (2014)..

[131] Hahn & Singer, *supra* note 129, 16-17 (2008).

[132] Christina Trotta, *The Google-DoubleClick Merger, the FTC, and the Future of Transactional Privacy Inquiries in the United States*, at 10 (2007), http://ssrn.com/abstract=1071823.

market."[133] As to the opposite of the Atlantic, EC was also concerned that Google would gain better advantages in providing targeted-advertising due to its acquisition of DoubleClick's users' database which would make it more difficult for competitors to match.[134]

Despite the above, both FTC and EC dismissed their concerns as to data in this transaction. Their reasons rendering were similar to some extent. From the antitrust perspective, input foreclosure concerns arise only when the input possessed by the merged entity constitutes an important (if not essential) input, which would be much hard to be obtained by the competitors post-merger, or the lack of which would significantly impact effective competition on the downstream. Given the non-rivalrous and replicable nature of data, competitors would remain accessible to users' data post-merger. And competitors also withheld data of unique value beyond Google's reach.[135] In addition, EC put an emphasis on the contractual obligations borne by DoubleClick, by which it assumed that DoubleClick would be bound to use users' data limited to internal purposes of improving its own services.[136] Furthermore, the upstream ad serving market where DoubleClick was active was highly-competitive and dynamic, even if acquiring datasets of DoubleClick, it would be unlikely for Google to leverage its market power from the downstream market to the upstream market through exclusive conducts.[137] As a result, both FTC and EC viewed that the acquisition of data by Google would not give rise to anti-competition concerns post-merger.

In numerous following cases, EC seemed to have taken a consistent view towards the issue of 'whether the acquisition of data would give rise to competition concern (particularly foreclosure concerns)'. Like in *Microsoft/Yahoo!*, *Facebook/Whatsapp, Apple/Shazam*, EC has dissipated its competition concerns revolving around the acquisition of data, grounded on reasonings similar in *Google/DoubleClick*. Reasons given primarily include (i) the legal or contractual obligations or business policies would handcuff the parties in the wielding of data, (ii) the non-rivalrousness or replicability of data would allow competitors access to data post-merger, and (iii) the dynamic and growing feature of the relevant market would render the market power of the merged entity ephemeral.

Whereas it casts doubts that whether data is so easily-accessible and widely-available as the above statements assumed. Thanks to the spread of internet, personal profiles of users may not be difficult to obtain, but data of particular value to competition may not be easily accessible, as exemplified in the arguments of PeopleBrower against Twitter that data held by

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[133] Daniel S Bitton & Leslie C Overton, *United States – E-commerce and Big Data: Merger Control*, Glob. Competition Rev. (2019), https://globalcompetitionreview.com/guide/e-commerce-competition-enforcement-guide/third-edition/article/united-states-e-commerce-and-big-data-merger-control; *See also Google/DoubleClick* File No. 071-0170, F.T.C., at 12 (2007) [hereinafter *F.T.C. Statement Google/DoubleClick*], https://www.ftc.gov/system/files/documents/public_statements/418081/071220googledc-commstmt.pdf.

[134] European Commission Decision CASE COMP/M.4731 *Google/DoubleClick*, Mar.11, 2008, C(2008) 927, ¶¶ 182-90, 258-77 (Eur.) ; *See also* Economics at the F.T.C.: *The Google - DoubleClick Merger, Resale Price Maintenance, Mortgage Disclosures, and Credit Scoring in Auto Insurance*, at 7-9 (2008).

[135] *F.T.C. Statement Google/DoubleClick*, *supra* note 133, at 12); *Google/DoubleClick*, ¶¶ 268-74.

[136] *Google/DoubleClick*, ¶¶ 317-323..

[137] *F.T.C. Statement Google/DoubleClick*, *supra* note 133, at 13 ; *Google/DoubleClick*, ¶ 127.

Twitter was not substitutable by other social networks including Facebook.[138] Further, established platforms attempt to shield data away from their competitors. For instance, Facebook imposes obligations in its Terms of Services to prohibit third parties from extracting users' data.[139] In addition, abilities to secure and update data matter. Existing data can be transitory and outdated on a very short notice[140], and to constantly track and update data demands considerable investment in hardware and software as well as innovative technologies. This makes the replicated data less valuable and requires the market players to effectively update data for ensuring data quality.[141] It is thus reasonbale that availability and replicability of data could not be the explanation for all mergers in digital era to dissolve concerns therefrom and the appraisal in this regard should be taken with care.

In practice, competition authorities in particular EC's attitude towards data is witnessed with a shift. In *Microsoft/Linkedin*,[142] EC likewise dispelled its competition concerns arising from the aggregation of data as in other cases in the substantive assessment. Nonetheless, EC ultimately decided a remedy having *de facto* effects of preventing abuse of data to foreclosure effects. Amongst others, Microsoft committed to allowing Linkedin's rivals' access to its newly-developed tool (i.e. Microsoft Graph). Microsoft Graph is a unified gateway enabling developers to build applications and services that has access to data of users (such as their contacts information, calendar information, emails and files) from Microsoft's clouds. This remedy intended to guarantee the interoperability between Microsoft's software and the professional social network ("PSN") products of Linkedin's rivals. It indicates that EC viewed that such data collected by Microsoft would serve the interoperability as an important input, and the foreclosure of which would be detrimental to Linkedin's rivals offering PSN services. Put differently, EC recognized the importance of such users' data that cannot or would not be easily achieved through other channels.

In *Google/Fitbit*,[143] EC expressly recognized the data's important role in market competition and decided a remedy specific to it. The competition concerns are two-fold. First, as in the online advertising services, Google was identified as having a dominant position and strong market positions in the online display advertising services market and ad tech services market in the EEA countries.[144] EC was concerned that the acquisition of Fitbit's users database would increase Google's already vast amounts of data for ad personalization, [145] entrusting Google with an overwhelming advantage against its

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[138] Inge Graef, *Market Definition and Market Power in Data/The Case of Online Platforms*, 38(4) World Competition 473, 501 (2015).
[139] *Id*., 480.
[140] Jan Krämer & Daniel Schnurr,*Competition Policy in Platform and Data-driven Markets: Long-term Efficiency & Exploitative Conducts*, Contribution to the Call: "Shaping competition policy in the era of digitization", 6 (2018), https://ec.europa.eu/competition/information/digitisation_2018/contributions/daniel_schnurr_jan_kraemer.pdf
[141] *Id*.
[142] European Commission Decision CASE COMP/M.8124 *Microsoft / LinkedIn*, Dec.6, 2016, C(2016) 8404 (Eur.).
[143] European Commission Decision CASE COMP/M.9660 *Google/Fitbit*, Dec.17, 2020, C(2020) 9105.
[144] European Commission Press Release, *Mergers: Commission Opens In-Depth Investigation into the Proposed Acquisition of Fitbit by Google* (Aug. 4, 2020) [hereinafter *Google/Fitbit In-Depth Investigation Decision Press*]. https://ec.europa.eu/commission/presscorner/detail/en/IP_20_1446 (last visited May 22, 2021).
[145] *Id*.

competitors,[146] thereby entrenching Google's market position and raise the market entry/expansion barrier of the online advertising services. Second, in the digital healthcare market, EC acknowledged Fitbit's users' health and fitness database as an important input for market players to serve Fitbit's users. EC was concerned that after Google's entering the nascent digital healthcare market, Google would restrict its competitors' access to Fitbit's database, putting its competitors at a disadvantage.[147] The two-fold concerns as pointed out make it clear that EC regards data having potential in raising market entry barrier and foreclosing competitors from the relevant market.

In the U.S., post the merger between *Google* and *DoubleClick*, the FTC's attitude towards the role of data has also seen a shift, as demonstrated in *Reed Elsevier/ChoicePoint*[148] and *Nielsen/Arbitron.*[149]

In *Reed Elsevier/ChoicePoint*, the parties were largest suppliers as well as intense rivals that engaged in electronic public records services to law enforcement customers in the U.S. The electronic public records services compile records of individuals and businesses for the provision of an investigative tool for law enforcement customers. In choosing suppliers, customers examine suppliers' capabilities to provide accurate and up-to-date public records data with sophisticated search analytics. Albeit this merger concerned a data-intensive market, the FTC decided to request the parties to divest the relevant business of ChoicePoint, such that to maintain effective competitiveness in the relevant market. Because not just would the transaction lead to the horizontal aggregation of the parties' business that would eliminate their head-to-head competition pre-merger, but also did the FTC recognize that requirements for the requisite ability of potential competitors to possess the data of breadth, depth and timeliness could not be achieved easily and posed a high market entry barrier.

In Nielsen/Arbitron, the relevant market was the syndicated cross-platform audience measurement services in the U.S. Suppliers would report the overall unduplicated audience size and frequency of exposure for programming content and advertisements across multiple media platforms, with corresponding individual audience data provided to advertisers and media companies. It was a relatively nascent market and both of parties possessed relevant services under development. In addition, the parties were significant suppliers of their respective single-platform TV and radio audience measurement services. Given the trend that the television viewership had shifted from traditional television platforms to other media like mobile devices, tablets and personal computers, the FTC identified that the cross-platform audience measurement services were growingly capturing more viewership in the US.[150] Albeit the parties had not launched the relevant syndicated cross-platform audience measurement services at time of the proposed merger, stakeholders such as customers

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[146] European Commission Press Release, Mergers: Commission Clears Acquisition of Fitbit by Google, Subject to Conditions, (Dec.17, 2020), https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2484 (last visited May 22, 2021).
[147] *Id*.
[148] *Reed Elsevier/Choice Point*, File No. 081-0133, F.T.C. Decision (2008), https://www.ftc.gov/news-events/press-releases/2008/09/ftc-challenges-reed-elseviers-proposed-41-billion-acquisition.
[149] Nielsen/Arbitron, File No. 131 0058, F.T.C. Decision (2013), https://www.ftc.gov/sites/default/files/documents/cases/2013/09/130920nielsenarbitroncmpt.pdf
[150] *Id*.

advertisers and media companies commented that the parties were best-positioned to provide the relevant services as they were the only two companies that owned representative panels capable of reporting television programming viewership and provided individual demographic data for television and cross-platform measurement,[151] indicating that such a prospective market would expect to be highly-concentrated post-merger and timely entry by potential competitors would be less likely. As a result, Nielsen was ordered to divest assets related to Arbitron's cross-platform audience measurement services to an FTC-approved buyer.[152]

The above two cases indicate that FTC recognized that the ability to acquire data was not easily achievable for some markets, and can constitute a market barrier to entry, showing an attitude shifted from that of FTC in Google/DoubleClick.

2. Remarks

In the above cases that are imposed remedies by respective competition agencies, no statement in the antitrust appraisal implies that the concerned data is non-replicable or exclusively controlled by the parties, or the parties were not bound by relevant data protection or privacy rules. Whereas the results of these cases demonstrate that the competitors (or potential competitors) of the parties in the relevant market would be hindered in competing effectively with the parties at least partially because of the acquisition of users' data through the merger. With a view to the difference in these competition authorities' conclusions in their assessment of the role of the data in above unconditionally- and conditionally-approved cases, a question inevitably arises that under what circumstances or what characteristics of the merger cases would be more likely for the regulators to perceive that the acquired data would give rise to competition concerns in the relevant markets?

First, the characteristics of the concerned market count. Though the markets concerned in the above cases are relatively nascent, their concentration degree varies. The online advertising services (covering the online ads intermediation services and ads serving services) in *Google/DoubleClick* were labelled as highly competitive and fragmented by both EC and FTC, where the market barrier to entry also was relatively low. In this market, though both authorities viewed data playing an important part in the provision of relevant services, it was not of unique value to the merging parties, and would remain replicable and accessible by competitors. That being said, the ability to collect and build own database does not constitute a barrier, and thus the acquisition of data would not appreciably impact rivals' effective competition. As opposed to the online advertising services, although the syndicated cross-platform audience measurement services in *Nielsen/Arbitron* were just at an infant stage, the merging parties were as the only two market players of capabilities to develop and market the relevant services. This indicates that to achieve the equivalent ability to build a database as *Nielsen/Arbitron* did would be challenging for entrants, and thus potential competition constraint could not be formed and the concerned market would be an oligopoly

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[151] *Id*.

[152] F.T.C. Press Release, *FTC Puts Conditions on Nielsen's Proposed $1.26 billion Acquisition of Arbitron* (Sept.20, 2013), https://www.ftc.gov/news-events/press-releases/2013/09/ftc-puts-conditions-nielsens-proposed-126-billion-acquisition>.

market post-merger. This rationale is observable in *Reed Elsevier/ChoicePoint*. The concerned market of electronic public records services to law enforcement customers was highly concentrated pre-merger, hinting that to achieve the scale of data required for launching the service would be struggling.[153] In light of above, in a market that is already fragmented, merger-specific acquisition of data would be less possible to raise concerns because the competitive market indicate competitors able to build their own database and thus can form effective competition constraint; whilst in a concentrated market, the acquisition of data would more likely to be challenged.

Second, the market position of the merging parties plays a part. To achieve foreclosure effects resulting from non-horizontal merger requires the seller to have significant market power in its market so that the purchaser would be able to extend its market power into the complementary market.[154] In the *Google/DoubleClick*, DoubleClick was identified being constrained by a large number of competitors and not able to exercise significant market power in the ad serving market.[155] Many other market players have their own database and can grow into viable rivals posing constraints over DoubleClick, it can be seen that the users' database possessed by DoubleClick would not be such important to raise competition concerns. In contrast, in *Google/Fitbit*, the health and fitness data collected by Fitbit from its customers is crucial for market players in the digital healthcare market to provide services to Fitbit's users and obtain their data in return. If Google imposed restrictions on its competitors' access to data of Fitbit, competitors would be foreclosed from Fitbit's customers and thus be put at a disadvantage in the digital healthcare market against Google. The rationale is consistent in *Microsoft/Linkedin*, where Linkedin ranked the first in some EU Member States for the provision of PSN services. This laid an underground for Microsoft to leverage its market power in its operating system and software markets to Linkedin's PSN services market.

Lastly, in the course of competition authorities' merger review of cases concerning the acquisition of users' data, it can be observed that competition authorities increasingly take a more vigilant view. In the face of digital markets that are assumed to be competitive and dynamic, authorities no longer cutomarily see data as easily accessible and collectable but pay more attention to the magnitude of the concerned data and any barriers confronting market players to obtain the like scale of data of merging parties.

VI. PATHS FOR FACILITATING A MERGER CONTROL REVIEW

Albeit peculiarities of digital markets likely result in the merged entity accuring its market power easier and impeding competition, it is erroneous to presumptuously conclude that such mergers, especially those triggered by tech giants, always lead to anti-competitive effects. With this in mind, this Section attempts to seek for ways for both public and private

[153] It is worth mentioning in *Google/Fitbit*, though the concerned digital healthcare market is nascent and fragmented, the fitness data held by Fitbit is unique to Fitbit's users. Google's rivals in the digital healthcare market should access to Fitbit's users' data to provide services to such users. It explains that the Commission at last imposed an "access to Fitbit's fitness data" remedy on Google.
[154] Economics Bureau of the F.T.C., *supra* note 134, 7-8.
[155] F.T.C. *Statement in Google/DoubleClick*, *supra* note 133, at 9; *Google/DoubleClick*, ¶ 296.

sides to move the merger control review forward to avoid the process from being clogged due to the mergers' digitalization-related feature.

A. Dynamics And Disruptive Innovation in Digital Markets

Disruptive innovations are sometimes called the "panacea" in digital markets, given that digitalization has converted "competition in the market" to "competition for the market".[156] It means that nascent players with disruptive innovation have the potential to supersede established tech giants in a relatively short period of time, characterising the digital markets as dynamic. In an early instance, Blackberry swiftly amassed mass popularity and gained dominance in the mobile phone market given its innovation in introducing email, full-proof security, and QWERTY features to its mobile phones launched in early 2000s.[157] Whereas just in a few years due to its aversion in continuing innovating in the increasingly-popular smart phone market, Blackberry flopped in a "spilt-second" and gave away its market share to Android smartphones and iPhones.[158] Likewise, Google toppled Yahoo!'s leading market status (from early 2000s to early 2010s) in the online search engine market[159]; relatively young competitors like Snapchat, Line, Whatsapp overturned the previous leaders AOL and AIM in online messaging services market; Spotify's streaming music services unseated Apple's dominance in the digital music service;[160] and Bytedance takes a stronghold in the online short video services at an astonishing speed. Accordingly, the role of disruptive innovation has played a crucial part in dispelling competition concerns in previous merger cases (*incl*. *Google/DoubleClick*. *Facebook/Whatsapp*, *Microsoft/Skype*).

But in practice, to convince authorities that competition concerns from the merger at hand would be dismantled by the disruptive innovation is not blunt. This article views that the to resort to disruptive innovation for moving merger control review forward can be dissected has a two-fold consideration. First, whether the merger concerned would enhance the market barrier dampening the incentive for innovation by (or potential) competitors? Second, whether the merger concerned is a 'killer acquisition' with an objective to remove a nascent player that possesses innovation of appreciable competition potential.

1. Disruptive innovation v. the strengthening of market entry barrier

The concern of tampering market dynamics or disruptive innovations in non-horizontal cases are more indirectly resulted, i.e. from input foreclosure strategies in vertical mergers (as discussed in above section regarding data) or from merged entity's leverage strategy in conglomerate mergers (to be discussed in ensuing section regarding "killer acquisitions"). Therefore this part mainly discusses horizontal mergers.

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[156] Michael Kades, *A Consistent if not Unified Vision: A Summary of the Stigler, UK Competition and EC Competition Reports*, Cong., 4 (2019), https://www.congress.gov/116/meeting/house/111072/witnesses/HHRG-116-JU05-Wstate-KadesM-20201001.pdf.
[157] Anushka Pandey, *Why Did Blackberry Fail?*, Brand Study (2020), https://www.feedough.com/why-did-blackberry-fail/ (last visited July 18, 2021).
[158] *Id*.
[159] Evans, *supra* note 14, 26-27.
[160] *Id*., at 27-31.

Firstly, cases of horizontal nature generally do not raise severe competition concerns in digital markets. Reasons given include, first, most transactions triggered by tech giants are of non-horizontal nature in the period from 2008 to 2018,[161] indicating that the amount of mergers of horizontal dimension is relatively small. Second, in a majority of the previous mergers of horizontal nature, merging parties had relatively low combined market shares, like in *Microsoft/Yahoo!* where the parties overlapped in the online advertising services and *Facebook/Instagram* where the parties overlapped in the supply of photo apps and potentially overlapped in the online displaying advertising services. This fact means that such mergers would more likely be pro-competitive since it allows the merged entities to better compete with the market leader and intensify the competitition. Take *Microsoft/Yahoo!* as an example. Both parties were not important undertakings in the online advertising market and much inferior to the market leader Google at time of the transaction. EC thus viewed that the merger would enable the merged entity to better compete with Google instead of raising market barrier to entry to the extent of stunting other competitors' innovation efforts. In addition, EC identified the merged entity's role in promoting both disruptive and incremental innovation in the online search engine field.

Nonetheless, it does not mean that all horizontal mergers in digital era are free of anti-competitive concern. A notable case is *Facebook/Whatsapp*. It is different from *Microsoft/Yahoo!* in that the transaction between Microsoft and Yahoo! in itself had moderate competition concerns and was expected to promote competition, and hence the innovatio argument was more like adding the icing on the cake. Whilst in *Facebook/Whatsapp*, though EC did not locate a precise market share of the parties in the consumer communication services, both parties already had millions of users worldwide or in the EEA.[162] Facebook also had 1.3 billion users in its social networking services and 200-300 million in the EEA,[163] complementary to the consumer communication services. It can thus be taken that at the time of the transaction, both Facebook and Whatsapp had a significant market position in the consumer communication services market. This led to the dynamic feature of the concerned market played a crucial part in assuring a dymanic market post-merger. First, it offset EC's concern of an underestimated market position of merging parties. Despite EC held that the parties provided an underestimated market share in the consumer communication services, it regarded the market "[a] recent and fast-growing sector which is characterised by frequent market entry and short innovation cycles".[164] Second, it facilitated a conclusion that the consumer communication services market was replete with competition and potential competition. EC identified the market as "[h]aving been characterised by disruptive innovation," indicating the status of incumbents could be easily threatened by nascent competitors.[165] And such a stance was demonstrated by EC with a

[161] *Lear report*, *supra* note 31, 20.
[162] *Facebook/Whatsaap*, ¶ 84 (Specifically, the Commission noted that at the time of the merger, Facebook Messenger had around 250-350 million users worldwide and 100-200 million users in the EEA, Whatsapp had 600 million users worldwide and 50-150 million users in the EEA).
[163] *Id*., ¶ 143.
[164] *Id*., ¶ 99.
[165] *Id*., ¶ 116.

number of instances that a great number of large incumbents were superseded by nascent companies.[166]

However, to conclude that the dynamic feature/disruptive innovation of digital markets can always ensure a dynamic market is imprudent. An outstanding case is the above-mentioned *Bazzarvoice/PowerReviews*. As stated above, the DoJ in this case challenged the closed merger because the merging parties were the only two operators in the R&R platform market pre-merger and the merger rendered an almost oligopoly market and substantially lessen the effective competition therein. In particular, the Court in this case assessed whether parties' arguments that the high-tech market was dynamic and rapidly-changing, and the product R&R market was facing formidable competition from potential competitors like Google, Facebook and Amazon could offset anti-competitive effects arising from the merger.[167] The Court rejected the arguments. On the one hand, the parties were not able to substantiate that these firms were likely to enter the market, and on the other the market barrier to entry in the relevant market was high, requiring "[s]yndication, switching costs, intellectual property/know how, and reputation"[168]. Further. by quoting from *United States v. Microsoft Corp*.[169], the Court noted that the growingly innovation in the market did not alter its mission in assessing the antitrust violation beforehand.[170] As a result, the Court ruled in favor of the DoJ to divest the merged entity.

From the above-described cases, it is indicative that to what extent the disruptive innovation can reserve a dynamic market and thus dispel comeptition concerns is subject to the case-facts and -merits. To have a clear-cut picture and streamline the analysis, these mergers of horizontal nature can be divided into three categories based on the market feature and parties' market position. In the cases like *Microsoft/Yahoo!* where the competition concerns, given case-facts, were not that severe *per se*, the market dynamics consideration may just play as an "icing on the cake" that is of no material role in dispelling competition concerns. In the cases like *Facebook/Whatsapp*, where the competition concerns were more severe, role of market dynamics/disruptive innovation could be substantial. And the parties should demonstrate that the dynamic feature of the market is real, proven by relatively fragmented market landscape where young competitors take a part and potential competition is imminent. Therefore the entrenched market power of the merged entity is more likely to be transitory and easily toppled. In the cases like *Bazzarvoice/PowerReviews*, where the merger would result in a highly-concentrated - almost oligopoly - market and the concerned market has certain barriers rendering timely market entry less possible, the innovation argument may lack feasibility. And the key still lies in to substantiate arguments that potential competition is imminent and real so that dynamic feature of the market indeed constrains the parties.

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[166] *Id*.
[167] United States v. Bazaarvoice Inc., No.13-cv-00133, *supra* note 54, 91-92 (N.D. Cal. 2014).
[168] *Id*., at 93.
[169] *United States v. Microsoft Corp*., 253 F.3d 34, 49-50 (D.C. Cir. 2001).
[170] *United States v. Bazaarvoice, Inc*., No.13-cv-00133, *supra* note 54, 99 (N.D. Cal. 2014).

2. Disruptive innovation v. "killer acquisition"

Killer acquisitions traditionally happen in the pharmaceutical industry. It is a theory of harm associated with mergers where the established large companies target smaller-scale firms with innovative pipeline products that are likely competing with their flagship products in the future. But the R&D efforts of the target firms would usually be abandoned, discontinued or reorientated post-merger to pre-empt a prospective close competition.[171] Turning into the digital era, tech giants GAFAM have made over 400 acquisitions in the past decade worldwide.[172] Worries thus arise that whether such giant platforms were driven by stifling potential competitors by way of acquisition.[173]

The "killer acquisitions" has been hectically debated,[174] though intricates are still tangling, this section sticks to locate ways to streamline the analysis process regarding killer acquisitions from a practice perspective. Following the logic implied in the *OECD Killer Acquisitions Background Note*, this section divides acquisitions as such in three case-scenarios.[175] The first two are more of a horizontal dimension, and the third one is of a complementary dimension: (i) the target pipeline product/innovation is highly-substitutable to the *core product* or *a promising innovation* of the incumbent; (ii) the target pipeline product/innovation overlaps the offering at one side of the incumbent which is not a flagship product/innovation of the incumbent[176]; (iii) the target pipeline product / innovation complement constitutes a neighboring product to the incumbent's platform, with which the target company may leverage its market position in an adjacent market entering into the market where the incumbent is active in the future.

(1) Overlapping between the core product of the incumbent and the target innovation

As in the first case-scenario, EU's *Horizontal Mergers Guidelines* provides that "[A]lternatively, effective competition may be significantly impeded by a merger between two important innovators, for instance between two companies with 'pipeline' products related to a specific product market. Similarly, a firm with a relatively small market share may nonetheless be an important competitive force if it has promising pipeline products."[177] In practice, a number of merger cases addressed such concern.

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[171] OECD, *Start-ups, Killer Acquisitions and Merger Control – Background Note*, DAF/COMP(2020)5, 5-6 (2020) [hereinafter *OECD Killer Acquisitions Background Note*].
[172] *The UK Report*, *supra* note 15, at 12.
[173] *Id*., at 45.
[174] *E.g*., *OECD Killer Acquisition Background Note, supra* note 171; Bourreau & de Streel, *supra* note 16; Massimo Motta & Martin Peitz, *Big Tech Mergers*, CRC TR 224 Discussion Paper Series, U. of Bonn & U. of Mannheim (2020), https://www.crctr224.de/en/research-output/discussion-papers/archive/2020/big-tech-mergers-massimo-motta-martin-peitz.
[175] *OECD Killer Acquisitions Background Note*, *supra* note 171, 19-20.
[176] To make it clear the difference between the first- and second-scenario, the first scenario concerns about the core products of the incumbent v. innovation of the target, by which the direct competition is obvious and the killing intention of the incumbent is easier to be caught. The second scenario concerns about the target innovation v. one or more of products/services (which may not be the flagship product) on either side of the incumbent platform, where the direct competition is less obvious than the first one, thus the "killing" objective needs more dissection.
[177] *Horizontal Mergers Guidelines*, *supra* note 87, ¶ 38.

In *Dow/DuPont*,[178] EC was concerned that the merger would result in the discontinuation, delay or reorientation of overlapping lines of innovation efforts in herbicide, insecticide and fungicide 'innovation spaces',[179] which was later fortified by internal documents of the parties which indicated a plan for reducing of R&D budget and incentives for collectively starting a new R&D project.[180] To alleviate this innovation concern, the parties made a commitment to divesting DuPont's entire global R&D organization in pesticides including pipeline products. In *Bayer/Monsanto*[181], a similar concern arose that the parties' R&D investments in digital agriculture would be decreased post-merger, as Monsanto's FieldView, a digital agriculture platform, was set to be launched in Europe, while Bayer just launched a competing platform Xarvio.[182] As a result, the parties committed to divesting Bayer's R&D lines for non-selective herbicides and Monsanto's global nematode seed treatment assets.[183]

In the U.S., an outstanding case is *Illumina Inc./Pacific Biosicences*.[184] The acquirer Illumina has held monopoly power in the concerned next-generation DNA sequencing (NGS) systems since 2009 and had a market share over 90% in 2015. Illumina specializes in the short-read sequencing technology.[185] Pacific Biosicences ("PacBio") was a nascent competitor in the NGS systems market with only 2-3% market share. While it pioneered in the long-read sequencing technology that offered substantial benefits over Illumina's systems including longer individual sequence read lengths, having already wooed some Illumina's customers away.[186] In addition, PacBio was consistently making investments to advance its technologies in NGS system. On the basis of the concentrated market structure, and in particular internal document of the parties that stated both of them seeing each other as a close competitor reinforcing FTC's killer acquisition concern. The FTC was concerned, because of the acquisition over PacBio, the existing and future competition on the market would be lessened substantially, and innovation efforts on new technology would deccrease, and challenged the case.[187] Consequently, the parties abandoned the proposed transaction.

Illumina/PacBio is representative because the parties' market shares were extremely discrepant to one another, but the competition pressure posed by a competitor as insignificant as PacBio (of 2-3% market shares only) over the monopolist Illumina by no means is negligible. The competition potential and expectable market strength of PacBio due to its continuous innovation were recognized by the FTC as important competition constraint over Illumina. In addition, such assertion of the FTC was not merely speculation, but corroborated

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[178] European Commission Decision CASE COMP/M.7932 *Dow/DuPont*, Mar.27, 2017, C(2017) 1946.
[179] Bourreau & de Streel, *supra* note 16, 16.
[180] Christopher Cook, Vladimir Novak & Sven Frisch, *Recent Developments in EU Merger Remedies*, 9 J. of Eur. Competition L. & Practice, 403, 406-08 (2018).
[181] European Commission Decision CASE COMP/M.8084 *Bayer/Monsanto*, Mar.21, 2018, C(2018) 1709.
[182] Christopher Cook, Vladimir Novak & Sven Frisch, *Recent Developments in EU Merger Remedies*, 10 J. of Eur. Competition L. & Practice, 394, 398 (2019).
[183] *Id*.
[184] *Illumina Inc./Pacific Biosicences*, File No.191-0035, F.T.C. Decision (2020), https://www.ftc.gov/system/files/documents/cases/d9387_illumina_pacbio_administrative_part_3_complaint_public.pdf.
[185] *Id*., 6-7.
[186] *Id*., 7.
[187] *Id*., 9-11.

by internal documents of the parties. In combination of other considerations such as the high barrier to entry, the FTC challenged the case.

Nonetheless, it is worthwhile pointing out that is that not all such cases ended up being redressed by divestiture remedy or being relinquished by the parties. In *Steris Corporation/Synergy Health*,[188] Steris was one of only two companies active in the market of sterilization services to medical device firms in the US, while Synergy Health only provided radiation sterilization services outside the U.S. The FTC found that Synergy Health had made advanced plans to enter into the U.S. market, with a new and promising sterilization technology. The FTC viewed that this merger would thus eliminate potential competition from Synergy over Steris after its expansion into the U.S. and thus challenged the case.[189] Whereas in the appeal, the court concluded that the FTC was not able to demonstrate the probability of Synergy's plan to expand into the U.S. and declined to grant the injunction, the FTC thus dismissed its complaint in the end.[190]

The above cases involving a "killer acquisition" theory of harm happen in agricultural technology or medical industry, but we can draw insights therefrom about the like concern in digital markets. The appraisal of whether innovation projects of a (potential) competitor would pose competition constraint over acquirers is not a purely speculative process. Rather, competition authorities came to their conclusion based on multiple factors to substantiate the speculation. These include the products' relationship, i.e. whether the pipeline products would fall within the same market where the incumbent is dominant, in other words, whether products between parties are highly-substitutable; the competition landscape, i.e. whether the market is already concentrated, and how many other competitors are active; the market entry barrier, i.e. any market barriers making it difficult to develop such an innovative project?; and the internal documents of the parties, i.e. whether such documents can corroborate the assertion of the discontinuation of the target's innovation. Within mind the above considerations, competition authorities may be able to demonstrate their competition concerns are realistic, otherwise would risk their complaint being revoked before the court.

(2) The target innovation overlaps the non-flagship offering on either side of the incumbent

Different from the first circumstance, the killer acquisition concern here may be more speculative, as the overlapping area between parties did not seem to reach the core product of the incumbent. That being said, the incumbent was not a monopolist in the overlapped market. This adds more uncertainty on whether the intention of the acquisition is to pre-empt a significant potential competitor, or merely to achieve efficiency, as shown in cases *Facebook/Instagram* and *Google/Waze* reviewed by U.K. OFT.

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[188] *Steris Corporation/Synergy Health*, File No.151-0032, F.T.C. Decision (2015), https://www.ftc.gov/enforcement/cases-proceedings/151-0032/sterissynergy-health-matter.
[189] OECD, *Start-ups, killer acquisitions and merger control – Note by the United States*, DAF/COMP/WD(2020)23, at 8 (2020).
[190] *Id*.; See also, *FTC v. Steris Corp.*, 133 F.Supp.3d 962 (N.D. Ohio 2015).

In *Facebook/Instagram*, the parties overlapped in the supply of photo apps services.[191] Facebook just launched its mobile photo app shortly after its announcement to acquire Instagram in May 2012.[192] At the time of merger, Instagram had already accumulated a considerable userbase in two years after its establishment in 2010, implied by OFT that "[I]nstagram has been downloaded more than 45 more times than Facebook Camera."[193] The killer acquisition theory of harm thus arose that whether the merger would enable Facebook to disregard Instagram's photo app in favor of its own product,[194] but OFT directly neglected this kind of concern in its assessment, possibly given the negligible market position of Facebook in this market. With a view to the *ex-post* observation, Instagram's photo app is not rebranded or discontinued by Facebook but has grown into a feather-fledged photo app with Facebook's assistance and investments.

In *Google/Waze*, the parties overlapped in mobile turn-by-turn navigation apps.[195] Google Map was a large incumbent of over 50% market share in the UK;[196] other strong incumbent included Apple Maps had an estimated market share of 30% in the UK.[197] Waze was considered as a popular application then. The OFT was concerned that whether the merger would "[r]esult in the loss of a growing and innovative competitor in the form of Waze which provided a competitive constraint on Google and might be an increasingly strong constraint going forward in the supply of turn-by-turn navigation applications for mobile devices.", and whether the merger would disincentivize Google to innovate and improve quality.[198] But after a counterfactual speculation, the OFT ultimately dismissed its concern on the eliminating of disruptive innovation as Waze, grounded on that accounting for the network effects, Waze was not considered reaching a sufficient user base in the UK allowing it to benefit from significant and insuperable network effects and having an acceleration in its future growth; other competitors were also posing stronger competition pressure on Google Map.[199]

Post-merger, it is witnessed that Instagram and Waze both have experienced a significant userbase growth. But in the counterfactual assessment, it remains unclear that absent-merger whether the target would be able to grow into a competitor fiercely competing with the incumbent, or purchased by third-parties.[200] Therefore, from the practitioners' perspective, it may be helpful to present that how realistic would be the removing of a disruptive competitor. For this purpose, the growth trend of the target pre-merger may be indicative. For instance, *Amazon/The Book Depository* is also a case of horizontal nature

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[191] *Facebook/Instagram*, ¶ 14.
[192] *Id*., ¶ 15.
[193] *Id*., ¶ 17.
[194] The OFT put an emphasis on the potential competition between Facebook and Instagram on the social networking services, but this vein should fall within the third circumstance of killer acquisitions theory of harm as divided above.
[195] *Google/Waze*, ¶ 13.
[196] *Id*., ¶ 30.
[197] *Id*., ¶ 29.
[198] *Id*., ¶¶ 26-28.
[199] *Id*., ¶¶ 49-52.
[200] *Lear report*, *supra* note 31, 7-8.

where the parties overlapped in the online selling of physical books in the U.K.[201] But it is much less controversial than *Facebook/Instagram* and *Google/Waze*, for which an important reason is that Book Depository was a rather small market player of only [0-5]% market shares then,[202] and not witnessed with consistent growth in consecutive years before the merger, as demonstrated by its internal documents and third-parties' comments.[203] Per the small market share and growth trend of the Book Depository, the OFT did not recognize it a realistic project that the merger would remove a disruptive competitor and substantially lessen the market competition.[204] Further, the more competitors on the relevant market and the lower the market entry barriers are, less likely a conceivable killer acquisition strategy will success, because the innovation growth can be easily reinstated from other (potential) competitors. Third, to demonstrate whether merger efficiency achievable from the mergers that would recoup the loss of potential competition may help justify the merger,[205] as hinted from the internal merger plan about the acquirer's investment over the target company, how could the achieved efficiencies be passed on to consumers, and the urgency and difficulties of the target tackling capital issues which may be more prominent in COVID times.

(3) The target innovation complements or constitutes a neighboring product to the incumbent's platform.

The third case-scenario is the most complicated and particular to the digital era. It concerns that the target's innovation product's future growth would vest it with ability to leverage market power from one market to the incumbent's dominated market, thereby putting itself in direct competition with the incumbent. Such mergers at the first sight are of vertical or conglomerate nature, but the killer acquisition theory of harm lies in the future horizontal competition between the parties. Following this rationale, the analysis can be three-pronged. First, whether the target's innovation product *complements* the acquirer's platform to constitute a neighboring relationship; second, through the neighboring relationship, whether the target is expected to achieve appreciable market power in the market where it is active; and third, via its market status in the neighboring market, whether the target would have the ability and incentive to enter the acquirer's market and thus pose a significant competition constraint.

To constitute a neighboring relationship, the target's innovative product should be in a vertical or a conglomerate relationship with the incumbent's platform.[206] In the vertical dimension, it means that the target product is an input to the incumbent platform; in the conglomerate dimension, the target product and the incumbent platform may have complementary, adjacent or even unrelated relationship.[207] Despite of the differences among specific types of a neighboring relationship, a precondition is the common pool of users

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[201] OFT Decision CASE ME/5085/11 *Amazon/The Book Depository*, Dec.14, 2011 (U.K.).
[202] *Id*., ¶ 46.
[203] *Id*., ¶ 105.
[204] *Id*., ¶ 107.
[205] *Lear report*, *supra* note 31, 7.
[206] *Non-Horizontal Mergers Guidelines*, *supra* note 128.
[207] Vincent Verouden, *Non-Horizontal Merger*, Fordham Inst., 24 (2007), https://ec.europa.eu/dgs/competition/economist/fordham.pdf.

between two products,[208] which becomes more sound in digital markets. As a common userbase would allow a start-up to benefit from the network effects and the collected users data, so as to expand its offerings to the incumbent's market easier.[209] The development of the short-video app Douyin (TikTok's China version) can illustrate this point. Douyin was launched in 2016 and has achieved a userbase of over 600 million DAUs in China by August 2020.[210] Before its roll-out, the parent company Bytedance's featured product was TouTiao, launched in 2012, a platform focusing on local news and information-feed that targeted-distributed news to its readers via algorithm analysis. By 2016, TouTiao achieved 600 million activated users and 140 million active users.[211] In the same year, TouTiao announced that it would launch Douyin as a new short-video block on its platform and invest 1 billion RMB in subsidizing short video creators on TouTiao. TouTiao's cumulated large userbase and data undoubtedly largely contributed to Douyin's success by channeling a large-scale of audience to Douyin that was appealing to short video creators. It can be taken that even if the products on two seemingly-distinctive markets, a common user pool facilitates a young company to expand from one market to another swiftly.

The first-tier analysis remains a factual assessment, whereas the second- and third-tier would be more speculative as based on future prediction. Since the second-tier analysis aligns with the above discussion on the second case-scenario - both looking into the future growth of the current (though nascent) offerings of the target -, discussion would not be repeated here. The assessment on the third-tier analysis, i.e. whether the target would have the ability and incentive to enter the acquirer's market and pose a significant competition constraint, has been touched upon in *Facebook/Instagram*, *PayPal/Honey* [212] and *PayPay/iZettle AB*[213], which should offer insights in this regard.

In *Facebook/Instagram*, the OFT has considered whether the merger would result in the loss of potential competition on social networking services and online displaying advertising, services on Facebook's social networking platform, as conjectured Instagram would expand into the two services in the future. Having regard to the rapid-growth in userbase of Instagram and its potential to develop, OFT dismissed its killer acquisition concern in that, on social networking services, Instagram's functionality on social network were significantly different from that of Facebook, indicating they were not close competitors; on the online displaying advertising service, Instagram had not made any revenue through services of advertising and Facebook would face quite a few competitors in the online displaying advertising market after closing. At that stage, OFT found it highly speculative to

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[208] *Id*., 31.
[209] *CESifo Working Paper*, *supra* note 115, 4.
[210] 199IT, *2020 Douyin Shuju Baogao (Wanzhengban) (2020 抖音数据报告(完整版)) [Douyin Data Report (complete version)]*, 2 (Jan. 5, 2021) http://www.199it.com/archives/1184841.html (last visited July 27, 2021).
[211] *Zhihu (知乎), Jinri Toutiao Yonghuliang You Duoshao? (今日头条用户量有多少?) [How Many Does TouTiao Have?] (July 27, 2017), https://zhuanlan.zhihu.com/p/28136523 (last visited July 28, 2021).*
[212] *BKA Decision CASE B6-86/19 PayPal/Honey, Dec.17, 2019 (Ger.), https://www.bundeskartellamt.de/SharedDocs/Entscheidung/EN/Fallberichte/Fusionskontrolle/2020/B6-86-19.pdf?__blob=publicationFile&amp%3Bv=2.*
[213] *U.K. Competition and Markets Authority Decision [CMA Decision] PayPay/iZettle AB, June 12, 2019 (U.K.), https://assets.publishing.service.gov.uk/media/5cffa74440f0b609601d0ffc/PP_iZ_final_report.pdf.*

assert that Instagram would evolve into Facebook's direct competitor rendering Facebook to suppress it pre-emptively by way of acquisition.

In *PayPal/Honey*, Honey is a platform, on one side, offering a browser extension free for users to find and apply promotional and discount codes when checking out, and on the other, charging commission fee from retailers or affiliate networks when their codes are used. At time of the merger, Honey had 17 million monthly active users worldwide.[214] PayPal offers a range of various payment services, in particular having a strong foothold in the online payment services.[215] It is observed that Honey and PayPal have a common pool of users, i.e. consumers, giving rise to concern that whether Honey, in the future, would wield its userbase and market power in the code-search service into PayPal's online payment services, motivating PayPal to pursue a pre-empt strategy through an acquisition. In the substantial assessment, the BKA recognized the growth potential of Honey especially due to the indirect network effects from its two-sided platform.[216] However, the BKA viewed that this case would not likely give rise to a killer acquisition concern, given there was no hint that Honey would compete directly with PayPal in the future, and the market where PayPal is active is replete of many competitors that would restrain PayPal's competition behavior which makes the speculated "killing" motivation meaningless. [217]

In comparison to *Facebook/Instagram* and *PayPal/Honey*, *PayPal/iZettle AB* may seem to be more likely to raise killer acquisition concern. The parties overlapped in the offline payment services through mobile point of sale (mPOS) services in the UK. While the rationale for the acquisition laid in the supply of omni-channel payment services that integrated online and offline payment service, allowing merchants to take all payment methods through a single provider.[218] In this regard, PayPal has already offered both online and offline payment services, and iZettle AB just launched its limited e-commerce service in April 2018.[219] Taking into account the fast-growing nature of the digital payment services, the CMA carried a counterfactual analysis on, absent the merger, whether "[i]Zettle would have been likely to expand further into the provision of online payment services, thereby enabling it to offer an enhanced omni-channel service."[220] This concern seemed to be more realistic than that in Facebook/Instagram and PayPal/Honey, given that the close complementary nature of involved offline-, online-, and omni-channel- payment services. But CMA dismissed it eventually relied upon evidence that iZettle's business plan and internal documents explicitly prioritize the development of its offline offering instead of marching on online payment services, [221] let alone an omni-channel service.[222] CMA was convinced that the killer acquisition theory of harm was less likely to materialize.

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[214] *PayPal/Honey, at 1.*
[215] *Id.*
[216] *Id., 2.*
[217] *Id., 3-4.*
[218] *PayPal/iZettle AB,* ¶¶ 4-6, 8-9.
[219] *Id.*, ¶ 7.
[220] *Id.*, ¶ 18.
[221] *Id.*, ¶ 21.
[222] *Id.*, ¶ 22.

As observed above, the prediction about "killer acquisition" theory of harm in third case-scenario is highly speculative, which not just concerns the target's growth in its existing business but also its future possible expansion to a complementary market. It is thus not surprising that albeit hot debates killer acquisition keep going on regarding, in practice competition authorities take a more pragmatic approach in proceeding with a counterfactual analysis. The evidence such as the past growth trend of the target, the market's competition landscape and internal documents of the parties are indicative to assess whether a killer acquisition is realistic or purely speculative.

3. Remarks

Taken overall, first, it is witnessed that the third case-scenario of killer acquisitions which is peculiar to digital platforms has not been substantialized in the merger control assessment in practice. This is largely because the counterfactual assessment in such cases is highly speculative, and an arbitrary conclusion risks in curtailing the merger efficiencies. Instead, the killer acquisition theory of harm confirmed imminent and real by competition authorities is more common in mergers of horizontal nature, where the intention of discontinuing or reorienting of the target innovation project is more discernable. Second, the barrier to market entry of the market where the acquirer is dominant matters. As the lower the barrier is, the less likely the merger would harm the innovation in the market. This makes it meaningless to shun down an innovative project of the target as such project can be easily achieved by other competitors, given that other market players can easily enter the market and compensate the loss of innovation resulting from the merger. It also explains why the killer acquisition and corresponding divestiture remedies happen frequently in pharmaceutical and agricultural technology sectors, where IP requirements and considerable capital investments heighten the market entry barrier and thus innovation loss through a killer acquisition may not be easily recouped. Third, internal documents of parties help. It may state the objective of merger or the future development of the target, indicative of whether the case at hand aims at stifling a disruptive innovation, or whether the killer acquisition is realistic. Lastly, inferred from the ex-post assessment of the merger between *Facebook/Instagram*, though the counterfactual assessment remains uncertain on the development of Instagram absent-merger, it is undoubtful that Instagram has grown into a fully-fledged social networking app and started monetizing its services through targeted-advertising,[223] to which Facebook has contributed greatly.[224] Therefore, weighing up the possible "killer acquisition" effects and perceivable merger efficiencies should play a part. In this regard, if the case-facts indicate that the more likely the merger would render a killer acquisition, a greater merger efficiency should be demonstrated by the parties.[225]

[223] *Lear report*, *supra* note 31, 58-59.
[224] *Id*. (Facebook has contributed to developing Instagram's business, with introducing new features to Instagram's photo app, providing physical infrastructure, helping it expand into different OSs, etc.).
[225] *Id*., at 71.

B. Factors May Offset Concerns from Network Effects and Data

1. Multi-homing

The impacts of network effects are limited by numerous factors, such as the upper bound of network effects to attract advertisers[226] and users.[227] But the element that is most likely to be substantiated in practice and persuasive is users' multi-homing.[228] Multi-homing is acknowledged as an "antidote" to the high maket concentration degree brought by strong network effects or data accumulation.[229] Like in *Facebook/Whatsapp*, EC identified the multi-homing of users and their ease of switching as an important factor to alleviate the network effects in consumer communication services, with effects lowering the market barriers to entry and the possibility to tipping effects.[230] In a more recent case *Microsoft/Github*, with a view to the combined high market share (around 50%) in the potential market for source code hosting services for version control and collaboration, EC dismissed the concerns therefrom, in particular, considering that multi-homing and the high possibility of switching collaborated by market investigation and Microsoft's internal documents would mitigate network effects generated from the transaction.[231]

But multi-homing cannot be the decisive factor to dismiss concerns from reinforced network effects. Ideally, users or advertisers would like to land on as many platforms as they could so as to broaden their options. In reality, users' inertia prevents them from being active on more than one platform,[232] given the mindset of preferring the simplicity of signing up for a service and "[n]ot having to select everything and do the brain-twisting exercise of deciding which setting is best for them."[233] In addition, multi-homing is not always occurring on both sides of platforms. It is not uncommon that single-homing is pursued by users on one side and multi-homing by customers on the other side. For instance, large amounts of users on a search engine platform predominantly opt for single-homing but advertisers on the other side usually practice multi-homing on the other. This would lead the platform to aggressively vying for the single-homing users,[234] so that attract more advertisers and have them stick to the platform. To this end, such platforms are likely to adopt various strategies such as offering subsidies to appeal to single-homing users. This may lead to a possible exploitative

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[226] Lerner, *supra* note 12, 58-59..
[227] Andrew Lilico & Matthew Sinclair, *Dynamic Competition in Online Platforms - Evidence from Five Case Study Markets*, at 27 (2017), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/602816/Digital_Platforms_report_new_BEIS.pdf.
[228] OECD, *Start-ups, Killer Acquisitions and Merger Control – Note by the European Union*, DAF/COMP/WD(2020)24, at 6 (2020).
[229] *The UK Report*, *supra* note 15, 37.
[230] *Facebook/Whataspp*, ¶ 133.
[231] *Microsoft/Github*, ¶¶ 100-02.
[232] Koren W. Wong-Ervin, *Assessing Monopoly Power or Dominance in Platform Markets*, 10 (2020), https://ssrn.com/abstract=3525727.
[233] *Id*.; *See also* F.T.C., *Competition and Consumer Protection in the 21st Century* (2018), https://www.ftc.gov/system/files/documents/public_events/1413712/ftc_hearings_session_3_transcript_day_1_10-15-18_0.pdf.
[234] David S. Evans, *The Antitrust Analysis of Multi-Sided Platform Businesses* (2012), U. Chi., Inst. for L. & Econ., Working Paper No. 623, at 15 (2012); *See also Wismer & Rasek Note to OECD*, *supra* note 3, 4.

strategy to be caught post-merger if the platform has a dominant position, which not only unhelpful in alleviating anti-competitive effects of the merger, but may deteriorate the circumstance. As such, though multi-homing has impacts in mitigating a lock-in effect post-merger, its utilization should be taken with caution and better combine other elements.

2. Data-related measures

As discussed above, mergers allow the acquirer to possess the dataset of the target and thus likely augment its data collection and ability in the welding of users data. This can be instantiated in the BKA's decision accusing Facebook of exerting its influence over self-owned services like Whatsapp and Instagram to collect users data.[235] Therefore, to assuage the competition authorities's concerns regarding the enhanced ability to collect data of the merged entity, parties' related commitments to keep the market dynamic would be of significant importance.

(1) Data portability and data interoperability

Right to data portability in the EU vests the data subject with the right to transfer his/her personal data from one data controller to another at his/her will, and in the meanwhile the data controllers shall implement necessary measures to facilitate this transferring.[236] Guaranteeing and implementing data portability would allow data as an input circulating among platforms,[237] thereby alleviating data lock-in effects arising from the enhanced data control ability due to the merger. But it should bear in mind that data portability is in itself a right designed for data protection and has limits to dispel concerns arising from data concentration post-merger.[238] Specifically, firstly, it is initiated only if data subjects so require, meaning that it may not redress the distortion of competition if data subjects are indifferent about their data. Secondly, the scope of the data portability remains debatable on whether it covers both data provided by consumers (personal data) and derivative data (non-personal data) that stems from users' action trajectory, or it covers both.[239] On the other hand, the technical feasibility of data transfer is subject to data interoperability, posing another challenge to realise data portability. If companies do not allow interoperability, the data portability right may not be meaningful.

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[235] The BKA Press Release, *Bundeskartellamt Prohibits Facebook From Combining User Data From Different Sources* (Feb. 07, 2019), https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2019/07_02_2019_Facebook.html (last visited May 10, 2021).

[236] Regulation 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 O.J. (L 119) 1, § 20 [hereinafter *GDPR*].

[237] Jörg Hoffmann & Germán Johannsen, EU-Merger Control & Big Data On Data-specific Theories of Harm and Remedies, Max Planck Inst. for Innovation and Competition No.19-05, 45 (2019).

[238] *Id*, 46.

[239] E.g. Josef Drexl, *Designing Competitive Markets for Industrial Data - Between Propertisation and Access*, 8 JIPITEC 257, 286 (2016) (where arguments have put forward that "since this rule on data portability constitutes a most suitable form of pro-competitive regulation, there is no reason why the right to data portability should be limited to personal data.").

Data interoperability means that "[t]he ability to transfer and render useful data and other information across systems, applications or components."[240] In abuse of dominance context, a mandatory requirement for the open of data interoperability relates to the "essential facility" doctrine, for which only under exceptional circumstances the refusal to data interoperability amounts to the abuse of dominance falling within Article 102 TFEU.[241] Thus stringent conditions to trigger the "exceptional circumstances" were set in previous court cases. Simply put, such conditions are: (i) it must be possible to identify two distinct levels of supply, the upstream of supplying the essential input, and the downstream of the provision of products or services that necessarily needs the essential input ; (ii) the refusal must concern an the essential input; (iii) the refusal must prevent the emergence of a new product for which potential consumer demand exists; and (iv) the refusal must be such as to exclude competition from the downstream market.[242] Though in the following Microsoft case[243] the interpretation of "exceptional circumstances" has been expanded,[244] it still can be seen that the European Court of Justice and EC stay circumspect to mandate an open of data interoperability remedy.

Nonetheless, to require the enssurance of data interoperability may be easier to be imposed in the merger control context, because the merging parties are allowed to voluntarily propose remedies to facilitate the clearance of the merger. In particular if the merger involving a tech giant and a nascent target that possesses important data for the tech giant and other entrants entering the target's or a complementary market, a commitment of data interoperability may play a crucial role to ease a foreclosure concern from the merger. Apart from above introduced *Microsoft/Linkedin* and *Google/Fitbit,* where such a remedy was imposed respectively, an example is *Google/ITA* in U.S.[245]

ITA was the provider of a leading independent airfare pricing and shopping system ("P&S System"). Its P&S System - QPX - had gained a leading foothold in the U.S. comparative flight search services. Pre-merger, ITA licensed its QPX to most popular online travel intermediaries ("OTIs") for their provision of comparative flight search services. The

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[240] Lizeth Carolina & Banda Cartuche, *Enforcing Data Portability in the Context of EU Competition Law and the GDPR*, MIPLC Master Thesis Series (2016/17), 19 (2017).
[241] Communication from the Commission — Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertaking*s*, 2009 O.J. (C 45), ¶ 78.
[242] *See* Joined Cases C-241/91, P & C-242/91 P, *RTE v. Commission*, 1995 E.C.R. I-743 (Eur.); Case C-7/97, *Oscar Bronner GmbH & Co. KG v. Mediaprint Zeitungs-und Zeitschriftenverlag GmbH & Co. KG*, 1998 E.C.R. I-7791 (Eur.); Case C-418/01, *IMS Health v. NDC Health*, 2004 E.C.R. I-5039 (Eur.).
[243] Case T-201/04, *Microsoft v. European Commission*, 2007 E.C.R. II-3601 [hereinafter *2007 Microsoft Judgement*] (Eur.).
[244] The "exceptional circumstances" doctrine was interpreted by the Court in *2007 Microsoft Judgement* in the following four circumstances: (i) the refusal relates to a product or service indispensable to the exercise of a particular activity on a neighbouring market, (ii) the refusal is of such a kind as to exclude any effective competition on that neighbouring market, (iii) the refusal prevents the emergence of a new product for which there is potential consumer demand and (iv) the refusal in incapable of being objectively justified. There are three expansion of interpretation in this case: (1) Concerning the requirement of elimination of competition, the requirement as signifying the elimination of 'effective' competition on the downstream (neighbouring) market is also met. (2) it is sufficient to demonstrate merely a 'risk' of effective competition being excluded or eliminated; (3) relating to the appearance of a new product, the limiting of technical development would suffice. See *2007 Microsoft Judgment*, ¶¶ 319, 647, 383, 387.
[245] *United States v. Google Inc*. 76 FR 21017 (U.S. Dep't of Just., 2011).

DoJ defined two relevant markets, one was the upstream product P&S Systems market, in which ITA was a leading market player and scarce alternatives were considered of equivalent merits in speed and flexibility to ITA's QPX. The other was the downstream market of comparative flight search services, needing P&S Systems to allow end-users to search for online flight information. Notwithstanding neither Google nor ITA had been active on this downstream market pre-transaction, making it difficult to characterize parties directly competing or in a vertical relationship, the DoJ viewed that ITA's QPX would allow Google to easily enter a new market expand Google's ecosystem and foreclose its prospective competitors in comparative flight search services.[246] In particular, the DoJ found that Google would have both the ability and incentive to develop a comparative flight search service through incorporating ITA's QPX technology; by doing so Google would expand its search services by launching an Internet travel site.[247] Accordingly, Google would have the ability and incentive to foreclose or disadvantage its prospective competitors in comparative flight search services by degrading or denying their access to QPX.[248] For redressing DoJ's concern, Google was committed to guaranteeing the continuous availability of key input in a robust fashion to other providers of comparative flight search services. Amongst others, a mandatory licensing agreement concerning QPX and InstaSearch[249] ensuring data interoperability and access post-merger was encompassed in the commitment portfolio for Google's future rivals. This case was then cleared with Google's commitments and Google in September 2011 launched its ITA-powered flight search product post-transaction.[250]

(2) The abuse of the enhanced data collection ability post-merger

The collection of users data without users' consent or to the infringement of data protection rules was originally not vetted by competition authorities. But given data's importancee in digital markets, in recent a number of cases, if the merged entity would expect to have strong market power or a dominant position in the relevant market, the abuse of its improved data collection ability due to the merger may touch competition authorities' nerve.

Data-privacy-related issues initially were raised in *Microsoft/Linkedin*, where EC affirmed that the offering of protection of users' data constituted a metric of customer choices and encouraged competitors to compete on it.[251] But in a sequence of later EC's decisions, EC kept stepping aside from touching data-privacy-related issues in the competition regulation realm. In *Facebook/Whatsapp*, EC noted that "[A]ny privacy-related concerns flowing from the increased concentration of data within the control of Facebook as a result of the Transaction do not fall within the scope of the EU competition law rules but within the scope of the EU data protection rules".[252] And in *Google/Fitbit*, when some responses to European Commission's investigations worried about the privacy-related issues due to

[246] *Id*., at 21019-21020; *See also* John E. Kwoka & Diana L. Moss, *Behavioural Merger Remedies: Evaluation and Implications for Antitrust Enforcement*, 57 Antitrust Bull. 979, 994 (2012).
[247] Kwoka & Moss, *supra* note 246, 994.
[248] *United States v. Google Inc*. 76 FR 21017, 21017 n.276. (U.S. Dep't of just., 2011).
[249] It is a pipeline product of ITA expected to be the upgraded product used in pricing and shopping service.
[250] *Id*.; See also, Kourosh Gharachorloo, *An early look at our Flight Search feature*, Google Blog (Sept.13, 2011), https://search.googleblog.com/2011/09/early-look-at-our-flight-search-feature.html.
[251] *Microsoft/Linkedin*, ¶ 350.
[252] *Facebook/Whatsapp*, ¶ 136.

Google's access to Fitbit's users data, it maintained to leave this issue to the data protection regulatory bodies.

However, indicated from the remedies imposed in *Google/Fitbit*, data-privacy-related issues seemed to have worried EC. As one of the commitments of Google was to ensure that the use of data either stored in Google or Fitbit's account would be subject to the consent of the data subjects.[253] Likewise, data-privacy-related issues also bewildered other competition agencies. In the above mentioned BKA Facebook Decision, BKA's identified Facebook's abuse its dominance in the German social networking services market that violated Article 102 TFEU on the basis that Facebook's data collection activities and policies had infringed the GDPR, and there was a loose causation between the GDPR infringement and its dominant position. In the merger control review of U.S. FTC over *Facebook/Whatsapp*, FTC ordered that the merging parties should inform their users that Whatsapp would continue its privacy practices, and any changes to the privacy policies of Whatsapp would be conditional upon customers' affirmative consent.[254]

Drawn from the above cases, data-privacy-related issues have been indeed considered in a merger control context, given that the merger gives the merged entity an enhanced data collection ability to collect users data and thus more likely infringe their privacy. As such, relevant data-protection policies and measures proposed by the merging parties are viewed of help to facilitate the merger control process.

VII. CONCLUDING REMARKS

Enormous mergers have been triggered in digital markets,[255] while a large majority of them have filed under the radar of the merger control. In the meanwhile the peculiarities of digital markets complicate the merger control and may have potential of augmenting likely anti-competition effects arising from the merger. Against this background, competition authorities around the world are perceived to pursue a more vigorous and stringent approach to tackle with mergers in digital industries. Nonetheless, in what way should such mergers be proceeded is still in hot-debates in practice and academia. A less considerate regulation may do harm to the competition in digital markets. Therefore, in order to account for considerations of both public and private sides and obviate a protracted merger review process due to its involvement with digital markets, this article delves into and offers solutions for outstanding issues at each step of the merger control procedure.

This article locates five peculiar features of digital era that are viewed of significant importance in merger control, and subsequently addresses how these features pose challenges to the merger control practice. In the writing process, I find out that issues peculiar to mergers in digital era cannot be judged as being simply black or white, and whether many

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[253] *Google/Fitbit*, app. Ad Commitments.
[254] F.T.C. Press Release, *FTC Notifies Facebook, WhatsApp of Privacy Obligations in Light of Proposed Acquisition* (Apr.10, 2014), https://www.ftc.gov/news-events/press-releases/2014/04/ftc-notifies-facebook-whatsapp-privacy-obligations-light-proposed.
[255] *The UK Report*, *supra* note 15, 12.

alleged concerns in academia would materialize is a case-by-case matter. In an instance, the turnover-based notification threshold may have its deficiencies in capturing mergers in digital era, but whether an enforcement gap exists triggering the need of modification is contingent upon the specific circumstance of a given jurisdiction. And the key should be put elsewhere, i.e. gauging whether the current notification scheme of jurisdiction remains efficient to catch mergers involving online platforms and under this premise, making it clear-cut for private sides to assess whether the merger cases beforehand are reportable. As to seeking for "antidotes" for moving merger control concerning digital markets forward, this article in particular explores the role of disruptive innovation and identifies it as a two-fold issue in impacting mergers in digital era, (1) its relevance with the strengthening of market entry barrier, and (2) its relevance with "killer acquisitions". Killer acquisition is an intricate topic; to streamline the analysis, it is further divided into three case-scenarios. This article also assesses other factors in relation to network effects and data of respective that have impacts in offsetting or dispelling concerns arising from a merger, albeit should be raised and dissected with care.

Lastly, despite of the fact that the digitalization era has expedited the growth of tech giants and given rise to a spate of competition concerns, it is undeniable that the internet / digitalization has indeed driven technology development, economic growth and enhancement of consumer welfare, which tally with the ultimate objective of the competition law. With this in mind, in the face of the digitalization and antitrust regulations struggling to keep up, to find out the right trade-off between public and private sides is of crucial importance in the guarantee of a level-playing-field by regulation on one side, and on the other the maintenance of continuous incentives to innovation that should not only from nascent companies but also from large incumbents. After all, if a firm achieves its monopoly simply by virtue of its superior efficiency, this at least should not be condemned,[256] which is of no reason not to be considered in a merger control context in digital era.

[256] *United States v. Aluminum Co. of Am. (Alcoa)*, 148 F.2d 416, 430 (2d Cir. 1945) (this case was heard by the Second Circuit Court of Appeals after four members of the Supreme Court disqualified themselves).