BIG DATA AND ANTITRUST RISKS IN CLOSE-UP: FROM THE PERSPECTIVE OF REAL CASES

By Ken Dai and Jet Deng[1]

Big data is the new battleground to achieve the competitive edge. The digital market features both the first-mover advantage and a winner-takes-all environment. Without doubt, enterprises fight for data, and suppress rivals from access to data. China, as one of the world's largest Internet markets with the largest Internet user population, exemplifies the heated data game. The Alibaba and SF Express data sharing spat is a famous example. In 2017, Alibaba's logistic network, Cainiao, cut off its data interface for SF Express, one China's largest couriers, and removed SF Express as a courier option on its e-commerce platform Taobao.[2] The dispute was traced back to SF Express's refusal to share customer logistics tracking data in the name of customer privacy protection.[3] Similarly, Cainiao's action was allegedly due to data security concerns. The matter was settled upon intervention by the State Post Bureau, China's courier service industry regulator. Similar disputes also occurred between Chinese tech giants Tencent and ByteDance, and between Tencent and Huawei, both of which will be discussed in this article. The yearning for data is overt among the leading companies, not to mention those smaller ones who remain far away from the tipping point.

The question is whether antitrust law has a role to play in regulating the competitive process for big data. By now the crossover seems to be inevitable and unstoppable. Across the world tech giants are often targets of competition law investigations. On the other hand, data protection laws have been increasingly applied in competition cases, such as the Facebook case in Germany which will be addressed in detail below. However, still there is a lot of space between "under-regulation" and "over-regulation."

The United States and China are examples of "under-regulation." Since *United States v. Microsoft Corporation*,[4] and until recently, the U.S. regulators have not accused any tech giants of antitrust violations. Similarly, China's digital economy does not fall much behind that of the U.S. and was also criticized for the lack of antitrust enforcement in the digital markets for the past twelve years since the enactment of its Anti-Monopoly Law.[5] In stark contrast, the European Union ("EU") is more aggressive in scrutinizing tech giants.

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2 *Data Sharing Cut Off as SF Express, Alibaba Spat Continues*, CGTN (June 2, 2017), https://news.cgtn.com/news/3d67444e7945444e/index.html.

3 *Id.*

4 253 F.3d 34 (D.C. Cir. 2001).

5 *See* Xu Liu, *Antitrust Enforcement Should Not Tolerate Internet Oligopoly*, The Paper (Aug. 29, 2018), https://www.thepaper.cn/newsDetail_forward_2390564 (criticizing the Internet giant for not filing merger notifications and circumventing antitrust reviews); *see also* Shanming Jin, *Reflection and Transformation of China's Antitrust Law Research Approach*, 34(04) Law Business Studies 71 (2017); Yang Cao, *Legal Regulations of Behaviors of Abusing Comparative Advantage in the Internet Field*, 34(03) Forum On Law 79 (2019).

The penalty against Google for abusing the dominance of its Android mobile operating system was a record-breaking EUR 4.3 billion[6] and was just one of the three fines that Google was hit with in the EU. The EU's antitrust probe against Amazon is still ongoing for Amazon's dual role as a retailer and a marketplace and how it took advantage of seller data.[7] More recently, the Commission also opened formal antitrust investigations to assess whether Apple's rules for app developers on the distribution of apps via the App Store violate EU competition rules.[8] The EU Member States are also active in some prominent cases. While it may not be proper to characterize the EU enforcement as "over-regulation", it is apparently on the other side of the spectrum from the U.S. or China. But is there a definitive point at which antitrust authorities should act righteously? There are no easy answers. Related topics have been repeatedly discussed, such as how network effects lead to dominance and how multi-homing complicates the analysis—all intricate issues but gradually falling back to clichés.

Instead of exploring theoretical ideas, this article will examine real cases. By looking at the circumstances surrounding and following those cases, it may be easier to have an instinctive appreciation for the role of antitrust law in the big data context. Specifically, this article will discuss: why the merger control regime might malfunction in start-up acquisitions; the increasing concern for pricing algorithms leading to a cartel situation; how to determine market dominance in a volatile digital market; the novel data-related abusive conduct analyzed from the antitrust perspective; and whether the long-lived essential facilities doctrine could still apply to big data. Each section will be accompanied by one or more high-profile cases in major jurisdictions.

I. START-UP ACQUISITIONS: THE LINGERING DIDI / UBER CHINA CASE

Start-up acquisition, particularly by large digital platforms, has become increasingly suspicious from the competition law perspective. This is the so-called "killer acquisition"—acquisitions of start-ups or nascent firms by dominant market incumbents. Start-ups begin with innovative projects, establishing customer base, and aggregating data pools, but often have not generated much revenue yet when turning themselves over to tech giants. Such acquisitions stifle potential competition by eliminating the potential threat posed by the start-up. Competition authorities in many jurisdictions are concerned that their merger review triggering thresholds are not broad enough to cover these kinds of transactions, particularly when the target firm has small turnover. On the other hand, even after reviewing, the authorities may not be quite confident that the existing theories of competitive harm will enable them to make the right decision, especially on data-driven capabilities in a rapid evolving market.

The 2016 Didi/Uber China acquisition is a typical case that generated heated discussions regarding China's merger control regime. On 1 August 2016, Didi Chuxing

6 *Google Fined a Record $5 Billion by the EU for Android Antitrust Violations*, The Verge (July 18, 2018), https://www.theverge.com/2018/7/18/17580694/google-android-eu-fine-antitrust.

7 European Commission, *Antitrust: Commission Opens Investigation into Possible Anti-competitive Conduct of Amazon* (July 17, 2019), https://ec.europa.eu/commission/presscorner/detail/en/IP_19_4291.

8 European Commission, *Antitrust: Commission Opens Investigations into Apple's App Store Rules* (June 16, 2020), https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1073.

("Didi"), a popular app-based ride-hailing platform in China, announced a strategic agreement with Uber China under which Didi would acquire all assets of Uber, including Uber's brand, business, and data. The acquisition ended a year-long price war between Didi and Uber during which drivers and passengers were attracted by both platforms through all kinds of allowance offerings. As a result of this deal, Didi would acquire market share of as much as 93.1% in the ride-hailing market in China.[9] Although this is not a typical "killer acquisition" (neither of them is a dominant incumbent though Didi's market share is quite high even before the deal), the acquisition exemplifies how the notification threshold based on the parties' turnover could be under-inclusive, and upon intervention by the Chinese competition authority nonetheless, how hard it could be to establish competitive harm in an extremely dynamic market.

A. Notification Thresholds That Are Under-Inclusive for Data-Driven Capacities

As to notifiability, Didi announced publicly that its turnover in the preceding fiscal year did not meet the relevant thresholds.[10] The turnover thresholds to trigger notification obligations in China are: the combined turnover of the parties exceeds CNY 2 billion (approx. USD 280 million) in China or CNY 10 billion (approx. USD 1.4 billion) globally; and the Chinese turnover of at least two of the parties to the transaction each exceeds CNY400 million (approx. USD 56 million). It was formulated when the Anti-Monopoly Law of China took effect in 2008 and has remained unchanged. Though widely criticized as too low to accurately mirror the economic reality in China, the thresholds still could not catch some high-profile transactions such as Didi/Uber China.

The case illustrates why turnover-based notifying threshold is under-inclusive, and cannot accurately reflect innovation capabilities based on data. The price war preceding this acquisition cost both Didi and Uber a significant amount of revenue. It was reported that Uber had suffered an annual loss of at least USD 1 billion in China.[11] Didi did not get rid of loss neither despite that it had possessed the data of more than 58.8 million users at that time.[12] The same reason goes to other start-ups and other jurisdictions. At an early stage, digital start-ups usually focus more on users and data than turnover. This is why Facebook's acquisition of Instagram was not reviewed by the European Commission and why, without a specific referral by national competition authorities, Facebook's acquisition of WhatsApp would not have been reviewed by the Commission.[13] For the same reason,

9 *Does Didi's Acquisition of Uber China Constitute an Industry Monopoly?*, China Youth Daily (Aug. 5, 2016), http://zqb.cyol.com/html/2016-08/05/nw.D110000zgqnb_20160805_6-01.htm.

10 *Id*.

11 *Didi Acquires Uber and Has 93.1% Market Share in China*, Jiemian News (Aug. 4, 2016), *available at* https://www.jiemian.com/article/779605.html.

12 *QuestMobile Data: Didi's Monthly Activity User Growth Ranks First with Nearly 200%*, Sohu (Apr. 25, 2016), https://m.sohu.com/n/446105417/.

13 Marc Bourreau and Alexandre de Streel, *Big Tech Acquisitions: Competition & Innovation Effects and EU Merger Control* (Centre on Regulation in Europe Feb. 2020), at 15, *available at* https://www.cerre.eu/sites/cerre/files/cerre_big_tech_acquisitions_2020.pdf.

U.S. regulators are now revisiting hundreds of deals made by tech giants in the past decade that were not required to notify according to law.[14]

B. Assessing Competitive Harms and Innovation Incentives in a Dynamic Market

Similar to the U.S., the competition authority in China also has the power to investigate a potentially anti-competitive transaction even though it did not trigger notification in the first place.[15] As early as September 2016, one month after the announcement of Didi/Uber China, the then merger control authority of China—the Ministry of Commerce—announced that it had launched an investigation into the deal. Almost four years passed, during which an institutional reform in 2018 led to the birth of the State Administration for Market Administration ("SAMR") taking over the responsibility of merger review. The last time the case was mentioned was a press conference held by SAMR in November 2018. On that occasion, Wu Zhenguo, the head of the Anti-Monopoly Bureau of SAMR, unequivocally said that the deal was still under investigation and they were assessing the deal's impact on market competition and industry development.[16] However, no decision has been made thus far.

Undoubtedly, it is no easy decision to challenge a start-up acquisition. Along with the traditional parameters—price, output, choice, and quality, a competition authority also has to consider innovation—a highly volatile parameter.[17] Data-driven innovation is pivotal for a sharing economy like Didi. Typically, both Didi and Uber collect users' locations, time, frequency and other data to analyze user habits, so as to offer more targeted services. For example, by analyzing data distribution of hours and roads, they can improve service coverage, alleviate peak hour pressure, and enhance passenger load factor. In addition to perfecting the basic services as a ride-hailing platform, the true value of big data may lie in researching new business opportunities. To name a few, transportation data could be used for providing analysis and consulting services to other related businesses. Platforms could also sell push-up ads, or direct traffic to expand into new services such as social networking or e-commerce. Apparently, continuous accumulation of data is one of the motives for various digital platforms to strive till the end.

While it is difficult to assess data-driven competency in a rapidly evolving market, we could look back at what happened in the past four years after the deal. The investigation aside, Didi itself has undergone several crises and its reputation was hit hard since the Didi/Uber China deal. Immediately after that, there were voices worrying about Didi's monopoly

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14 *F.T.C. Broadens Review of Tech Giants, Homing In on Their Deals*, The New York Times (Feb. 11, 2020), *available at* https://www.nytimes.com/2020/02/11/technology/ftc-tech-giants-acquisitions.html.

15 According to Article 4 of the *Provisions of the State Council on the Thresholds for the Notification of Concentration of Undertakings*, "[i]f a concentration of undertakings does not meet the notifying thresholds stipulated in Article 3 of these Provisions, but the facts and evidence collected in accordance with the prescribed procedures indicate that the concentration of undertakings has or may have the effect of eliminating or restricting competition, the competent department under the State Council shall conduct an investigation according to law."

16 *SAMR: Conducting Anti-monopoly Investigation on Didi/Uber Merger According to Law*, Xinhuanet (Nov. 16, 2018), http://www.xinhuanet.com/fortune/2018-11/16/c_129995829.htm.

17 Bourreau & Streel, *supra* note 13, at 17-18.

position. Drivers and passengers complained that they could no longer enjoy the allowances or discounts as before during the price war and there were even fare increases.[18] Didi's policy of raising rates at peak hours led to a lawsuit alleging its abuse of dominance.[19] Moreover, in 2018, Didi was under the spotlight again due to safety incidents and was questioned whether its monopoly position stimulated Didi's neglect of security.[20] At the same time the ride-hailing market in China continues to welcome new entrants. For instances, food delivery service platforms like Meituan, traditional taxi dispatching companies like Qiangsheng, car makers like BMW, and bicycle sharing service platforms like Hellobike, all have been or are positioning for ride-hailing service recently.[21]

As an ex ante regime, merger control is difficult in anticipating or even speculating about what will happen as a result of a transaction. If turnover, market share, or market concentration are no longer accurate indicators, reliance then falls on subjective standards such as innovation or efficiency. It is also uncertain for what term should the competitive concerns be evaluated—the year immediately after the transaction, five years, or longer. Didi may argue that easy access to ride-hailing market does not support government intervention in its deal, and new entrants can always keep Didi in check. However, an opposite narrative is, despite all the negative news regarding it, Didi still led the market in 2019 with an overwhelming market share, possibly more than 80%. [22] If competition law is meant to intervene only to prevent the tipping point, merger control can be justified only when a transaction at issue is the exact cause of reaching that tipping point. However, it is hard to decide on the right moment to intervene. More often, due to fear of inaccuracy or falsification, competition authorities could be hesitant and involuntarily choose to not intervene.

II. PRICING ALGORITHMS: DISTINGUISHING THE UBER CASE

Different from the rarely challenged start-up acquisitions under merger control, in the field of cartels, competition law enforcement cases involving data-based algorithms have become commonplace. Various platforms facilitate price comparison by consumers and are supposed to intensify competition. However, the reality might be quite the opposite. The transparency in pricing also facilitates collusion, monitoring of deviation, and frequent interactions to achieve equilibrium—features conducive to a cartel.

Generally, price fixing is illegal—irrespective of how it is implemented. For example, in 2015, the U.S. Department of Justice ("DOJ") filed criminal charges against

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18 *Is Didi's Price Increase a "Trouble" Caused by Monopoly?*, Shanghai Financial News (Sep. 20, 2016), *available at* http://wap.cnki.net/touch/web/Newspaper/Article/SHJR20160920B020.html.

19 *Huang Wende v. Didi Chuxing Technology Ltd.*, dismissed by Zhengzhou Intermediate People's Court of Henan Province; appealed to and heard by the Supreme People's Court of China on September 24, 2019 and not decided yet.

20 *Media Questioned the Didi Incident: Did Didi Cooperate with the Police in a Timely Manner and Was It Suspected of Monopoly?*, The Paper (Aug. 28, 2018), *available at* https://www.thepaper.cn/newsDetail_forward_2386317.

21 *There Are New Players in the Online Ride-hailing Market. Can We Break the Monopoly of Didi?*, 36KR, *available at* https://36kr.com/topics/819242074113.

22 *Analysis of the Market Status and Competition Pattern of China's Online Ride-hailing Industry—Intensified Market Competition*, Qianzhan Industry Research Institute (June 16, 2020), https://www.qianzhan.com/analyst/detail/220/200616-8a21c418.html.

an e-commerce cartel formed by an art seller operating on Amazon through pricing algorithm with its competitors. The seller settled with the DOJ for a USD 20,000 fine.[23] Subsequently, the co-conspirator was fined USD 50,000 and its executive was sentenced to six months in prison.[24]

However, when platforms are involved, it becomes muddy whether there exists price collusion. Platforms are in a uniquely advantageous position in setting prices, as they have aggregated a huge amount of data from both sides and even have knowledge of each individual's price preference. If a platform is just an intermediary that matches sellers with buyers and the sellers are independent from each other, the use of algorithm to coordinates the sellers' prices is very likely price-fixing. But if the sellers are deemed to accede to the platform, by accepting its terms including pricing algorithm, the platform and all the sellers are no longer independent and price-fixing seems inherent in the platform's business mode. The discussion here will focus on Uber and an OTA (online travel agency) cases in Europe, two technology platforms that received different legal findings.

A. Comparing the Facts in *Uber* and in *Eturas*

At the beginning of 2016, an Uber passenger sued Uber's CEO in a U.S. federal district court, alleging that Uber's operation and pricing methods are equivalent to a hub-and-spoke pricing cartel.[25] In March 2018, the district court granted Uber's motion to compel arbitration.[26] The appointed arbitrator ruled in Uber's favour on 22 February 2020, but the plaintiff asked the court to overturn the arbitration result.[27] Uber was also investigated in India for a similar reason, but the Competition Commission of India ("CCI") concluded in 2018 that the unified algorithm for pricing in third-party platforms is not equivalent to a hub-and-spoke cartel.[28]

In a similar case, thirty travel agencies in Lithuania were considered to be implementing hub-and-spoke cartel for sharing the same online travel booking system,

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23 *Former E-Commerce Executive Charged with Price Fixing in the Antitrust Division's First Online Marketplace Prosecution*, Department of Justice (Apr. 6. 2015), https://www.justice.gov/opa/pr/former-e-commerce-executive-charged-price-fixing-antitrust-divisions-first-online-marketplace#:~:text=April%206%2C%202015-,Former%20E%2DCommerce%20Executive%20Charged%20with%20Price%20Fixing%20in%20the,the%20Department%20of%20Justice%20announced.

24 *Online Retailer Pleads Guilty for Fixing Prices of Wall Posters*, Department of Justice (Aug. 11, 2016), https://www.justice.gov/opa/pr/online-retailer-pleads-guilty-fixing-prices-wall-posters; *Former E-Commerce Executive Pleads Guilty to Price Fixing; Sentenced to Six Months*, Department of Justice (Jan. 28 2019), https://www.justice.gov/opa/pr/former-e-commerce-executive-pleads-guilty-price-fixing-sentenced-six-months.

25 *Meyer v. Kalanick*, No. 1:15-cv-09796-JSR (S.D.N.Y. Jan. 29, 2016), Dkt. 37, *available at* http://blogs.reuters.com/alison-frankel/files/2016/04/meyervkalanick-complaint.pdf.

26 *Meyer v. Kalanick*, 291 F. Supp. 3d 526, 536 (S.D.N.Y. 2018).

27 *Uber Customer Claims Company Won Price-fixing Suit Because Arbitrators Was Scared*, Reuters (May 23, 2020), *available at* https://www.reuters.com/article/us-uber-lawsuit/uber-customer-claims-company-won-price-fixing-suit-because-arbitrator-was-scared-idUSKBN22Y2ZZ#:~:text=Spencer%20Meyer%20initiated%20the%20high,the%20Uber%20ride%2Dhailing%20app.

28 Basu Chandola, *Algorithms and Collusion: Has the CCI Got It Wrong?*, Kluwer Competition Law Blog (Feb. 28, 2019), *available at* http://competitionlawblog.kluwercompetitionlaw.com/2019/02/28/algorithms-and-collusion-has-the-cci-got-it-wrong/.

Eturas. Eturas applied a common cap on discounts that the travel agencies could offer through the platform, and the cap was communicated in the form of an amendment to the platform terms and conditions.[29] However, in 2016, the European Court of Justice ("ECJ") reached a different conclusion. The ECJ pointed out that if the travel agency understood that there might be anti-competitive collusion in the platform management system and still used the system, the agency could be presumed to have participated in the cartel.[30]

B. Why Is Uber Exempted and Where to Draw the Line?

At a glance, *Eturas* is distinguishable from *Uber.* For example, platforms such as Eturas do not have pricing power over travel agencies and therefore, the pricing algorithm agreement reached between travel agencies on the Eturas platform is very likely to constitute a cartel. But in the case of Uber: accepting its unified price algorithm seems to be an inevitable prerequisite for entering the platform. Granted, not all platforms shall be treated equally.

But is there a bright line between *Eturas* and *Uber*? What kind of platforms is allowed to intervene into sellers' pricing? First, it is not very helpful to distinguish between B2C and C2C, as we can imagine that Amazon or Taobao as a C2C market would not be allowed to coordinate prices. Second, Uber is an example of a sharing economy in addition to its roles as a platform, while Eturas is not. Sharing economies employ a unique peer-to-peer fashion in which the in-between service provider is more apt to formulate a uniform pricing level. But we may look at another example of a sharing economy, Airbnb, a platform to share extra spaces in peoples' homes. Different from Uber, Airbnb let the hosts determine their listing price, though it sometimes provides price suggestions.[31] Other sharing economy applications own the resources that they share—e.g., WeWork holds leases of millions of square-feet to offer shared office space,[32] and Mobike owns millions of bikes to share.[33] So understandably those applications are free to determine pricing. But why is Uber (or other ride-hailing applications including Didi in China) an exception—owning nothing, merely matching drivers with passengers—allowed to price? Third, admittedly, pro-competitive benefits are also evident under the Uber model. Uber with sufficient data could prevent passengers from being 'held-up' caused by information asymmetry. For instance, a driver asking for excessive price on a rainy night. And generally, Uber's price is even lower than taxi companies that it was sued for predatory pricing

29 Sophie Lawrance & Marc Linsner, *Eturas—Any Conclusions on Platform Collusion..?*, Kluwer Competition Law Blog (Jan. 19, 2017), *available at* http://competitionlawblog.kluwercompetitionlaw.com/2017/01/19/eturas-conclusions-platform-collusion/.

30 *Id.*

31 *Airbnb Answers: Pricing Suggestions*, Airbnb (Aug. 21, 2018, 7:02 AM), *available at* https://community.withairbnb.com/t5/Airbnb-Updates/Airbnb-Answers-Pricing-suggestions/td-p/790645.

32 *Here's a Look at How WeWork's $50 Billion Pile of Office Leases Could Unravel*, MarketWatch (Oct. 14, 2019, 4:03 PM), *available at* https://www.marketwatch.com/story/heres-a-look-at-how-weworks-50-billion-pile-of-office-leases-could-unravel-2019-10-10.

33 *Mobike to Refund $150m as Bicycle-Sharing Market Heats up*, Financial Times (July 5, 2018), *available at* https://www.ft.com/content/ac332862-7ff9-11e8-bc55-50daf11b720d.

in several jurisdictions.[34] However, the question is still unanswered why rule of reason, instead of per se rule, applies to Uber usually applies to a cartel involving algorithms. All these arguments lead to doubt concerning platforms' algorithms—platforms are in a unique position to aggregate big data and formulate algorithms (pricing or non-pricing), but line-drawing is extremely difficult.

Either *Uber* or *Eturas* has at least some explicit agreement on the algorithm, but in reality what is actually happening may be merely "tacit collusion." It brings difficulties to cartel enforcement. Generally, horizontal price-fixing agreements require entities to commit at least "concerted practice", which requires at least some communication between the parties. In the digital world, the existing Internet oligopoly combined with converging algorithms makes it possible to collude between parties without communication.[35] Further, through the use of machine learning or deep learning based on massive data, algorithms can learn and potentially collude without human intervention. It is controversial whether the automated decisions should be imputed to human wills, but thus far there is no consensus on these complex issues.

III. FROM DATA AGGREGATION TO MARKET DOMINANCE: THE RAPIDLY EVOLVING INSTANT MESSAGING SERVICES IN CHINA

The existence of a dominant position in the relevant market is the precondition of abusive conducts. Although there are problems caused by its special attributes such as network effects, bilateral and even multilateral markets, and users' multi-homing attributes when finding dominant position in the digital market as comparing to traditional markets,[36] it is not unusual to find such dominance in the digital market. For example, the EU has held that Google has a dominant position in the markets of European online searching, Android operating system, and online advertising intermediary. In the German Facebook case that will be discussed in the following section, the relevant market was defined as the social network market in Germany, and Facebook occupied more than 80% market share with its daily and monthly active user base.

In addition, the EU has accumulated extensive experience in digital acquisition cases such as Microsoft / LinkedIn. In that case, the EU's investigation under merger rules focused in particular on three areas, namely, professional social network services, customer relationship management software solutions, and online advertising services.[37]

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34 Parveer S Ghuman, *Analysis of Competition Cases Against Uber Across the Globe*, Cuts International (March 2017), *available at* http://www.cuts-ccier.org/pdf/Analysis_of_Competition_Cases_Against_Uber_Across_the_Globe.pdf.

35 *How to Unveil Algorithmic Collusion? Professor Guangyao Xu of Nankai University: Anti-monopoly Law Can Be Applied*, Southern Metropolis Daily (Dec. 5, 2019), *available at* https://m.mp.oeeee.com/a/BAAFRD000020191205235541.html; *see also*, *Algorithms and Collusion: Competition Policy in the Digital Age*, OECE (2017), www.oecd.org/competition/algorithms-collusion-competition-policy-in-the-digital-age.htm.

36 Xiong Hongru, *Several Understandings of Platform Competition in the Era of Digital Economy*, China Economic Times (Aug. 16, 2019), *available at* http://www.drc.gov.cn/xsyzcfx/20190816/4-4-2899174.htm.

37 *Mergers: Commission Approves Acquisition of LinkedIn by Microsoft, Subject to Conditions*, European Commission (Dec. 6, 2016), https://ec.europa.eu/commission/presscorner/detail/en/IP_16_4284.

The Commission approved the acquisition subject to conditions, given Microsoft and LinkedIn are mainly active in complementary business areas, with minor overlaps in online advertising.

Although there are similar M&A review or administrative enforcement cases in China, as early as 2014 in *Qihoo v. Tencent*[38], the Supreme People's Court set a precedent on defining the relevant market and determining dominant market position in the instant messaging service market in Mainland China. The dominance determination concerned Tencent QQ—an extremely popular instant messaging service in a pre-mobile Internet era. In that case, the court held that, it is not necessary to clearly define the relevant market in every case of abuse of market dominance. Without a clearly defined relevant market, the market power of the enterprise concerned and the potential impacts of the suspected abuse on market can be evaluated by direct evidence proving exclusion or elimination of competition. Moreover, though generally speaking, the higher the market share is, the more likely it is to indicate the existence of a dominant market position, market share is only a rough and potentially misleading indicator of market dominance, especially considering the highly dynamic competition in the Internet environment. Taking into account all the factors when analyzing traditional markets, including market share, competitive situation in the relevant market, the defendant's ability to control the price, quantity or other trading conditions, the defendant's financial and technical capability, and market entry barriers etc., as well as the characteristics of the digital market, the court declined to find dominant position.

Based on the experience of various jurisdictions, the definition of relevant market and determination on market dominance are often considered under the traditional framework. Besides, the characteristics of emerging digital markets cannot be ignored, as they may play a decisive role therein. For example, due to the network effects based on the number of users and the lock-in effects based on user preferences, enterprises, especially those who enter the market first, usually have obvious advantages in market shares compared to their competitors. However, in the Internet industry, an enterprise with a high market share does not necessarily have a dominant market position, and the ability to maintain such market share in the relevant market is more important in assessing market power. As such, insignificant market share does not mean that the enterprise's influence on the market must be weak. Moreover, obvious innovation advantages may facilitate attracting consumers and achieving a high market share in a short time. For instance, when QQ, an instant messaging software of Tencent Inc. was in its infancy, Microsoft's MSN had the largest market share in the instant messaging service market in Mainland China (more than 50%). QQ's market share soon exceeded MSN. But now, with the evolvement of mobile Internet, QQ has been replaced in China by another messaging service also developed by Tencent—WeChat.

To sum up, the formation and existence of dominant position in the digital market has its own peculiarities. Therefore, traditional methods or standards for determining market dominance may need to be adjusted when applied to digital markets. In particular, the highly dynamic and instable digital market competition and the rapid technological innovation have greatly weakened market share as an indicator for the market power of an enterprise.

38 *Beijing Qihoo Technology Co., Ltd. v. Tencent Technology (Shenzhen) Co., Ltd., and Shenzhen Tencent Computer System Co., Ltd.* (2013), Min San Zhong Zi No. 4.

IV. DATA ABUSE: THE GROUND-BREAKING FACEBOOK DECISION—HOW FAR CAN IT GO?

Abuse in the collection and use of users' data is discussed a lot in the digital world, but usually has to be addressed based on data protection law rather than competition law. But last year's Facebook decision in Germany is distinctive because it was decided under the abuse of dominant position provision of the competition law. On 7 February 2019, the German Federal Cartel Office ("Bundeskartellamt") announced its decision based on a three-year investigation on Facebook' data collection and found exploitative abuse in Facebook's collection, merge, and use of users' data.[39] According to Facebook's terms and conditions, users can only use the social network under the precondition that Facebook can collect user data through Facebook-owned platforms (such as WhatsApp and Instagram) or any other third-party websites and software that use Facebook's business tools (including the "Like" buttons and Facebook log-in account). Users have no choice but to accept Facebook's terms and conditions, if they wish to use Facebook's services. According to cases in the German courts, abusive conducts under the competition law include violations of the general principles of German Civil Law and fundamental human rights, which includes data protection. In this decision, the Bundeskartellamt held that Facebook's conduct violated the GDPR and general data protection principles, and therefore constituted abusive conduct. Finally, the Bundeskartellamt required that Facebook can use user data collected on its owned platforms, third-party websites and software only if it has obtained the voluntary consent from its users, that is, users' refusal to consent does not affect their use of Facebook. Such measure is equivalent to an internal divestment of Facebook's data processing activities. Facebook appealed. On 23 June 2020, the German Federal Court of Justice made a procedural ruling against Facebook.[40]

What is innovative about the German Facebook decision is that it provides some sort of clue on what kind of data use constitutes "abuse", although its reasoning is not free from controversies. Traditionally, dominance abuse can be categorized as "exclusionary abuse" and "exploitative abuse". The former means restriction of competition by squeezing rivals out of the market, such as predatory pricing and exclusive dealing, while the latter refers to the behaviours that directly harms consumers' interests, such as excessive pricing and price discrimination. Exploitative abuse is less likely to be pursued because enforcement agencies often fear for excessively interfering the market. However, that has changed in recent years, and the Facebook case represents a breakthrough given the finding of "exploitive abuse" by the German regulator.[41]

From a theoretical perspective, there are two approaches on how excessive collection and use of data may be deemed to constitute abuse under competition law. First, if the data provided by users is treated as consideration or counter-performance for using digital services, excessive collection and use of data may constitute "excessive pricing."

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39 *Bundeskartellamt Prohibits Facebook from Combining User Data from Different Sources*, Bundeskartellamt (Feb. 7, 2019), https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2019/07_02_2019_Facebook.html.

40 *Facebook Loses Antitrust Decision in Germany over Data Collection*, The New York Times (June 23, 2020), *available at* https://www.nytimes.com/2020/06/23/technology/facebook-antitrust-germany.html.

41 Marco Botta & Klaus Wiedemann, *Exploitative Conducts in Digital Markets: Time for a Discussion After the Facebook Decision*, 10(8) Journal of European Competition Law & Practice 465 (2019).

In a world where platforms mainly provide free services to consumers, traditional way of determination of excessive pricing may no longer apply. But users always have to provide their own personal data as the counter-performance. In that way, the benchmark to determine whether the conduct constitutes excessive pricing could be whether the services provided to users match the amount or types of personal data requested by the platform.[42] Second, if users cannot help but agree on the method of bundling authorisation which results in the users' losing control of their personal data, such unfair conditions may constitute abuse. This is the approach adopted by the Bundeskartellamt in the Facebook case.

Some critics say that the Bundeskartellamt's decision blurred the boundaries between competition law and data protection law, arguing that there is no causal link between excessive collection of data and Facebook's market dominance.[43] However, the German high court used very strong wording in its decision upholding the regulator's decision.[44] It held that there is user exploitation just because competition is excluded due to Facebook's dominant position, and its term of use is also designed to hinder competition. Specifically, the court mentioned network effects. It said that access to data is an important competitive parameter not only in the advertising market but also in the social network market, and Facebook's large database reinforces its position and thus excludes competition on both sides of the market. The case will still await a substantive ruling in a lower court of Germany, or might be appealed again or even referred to the European Court of Justice.[45] If finally affirmed, applying competition law in excessive collection or misuse of data could open a Pandora's box.

In addition to the excessive collection and use of data exemplified by the German Facebook case, in practice, another familiar practice that is likely to constitute abusive conduct is price discrimination, also known as "big data discrimination". In economics, consumers with different elasticities of demand are willing to pay different prices for the same commodity. If a supplier knows the demand conditions of its consumers, it can use differential pricing to grab consumer surplus. The premise that the supplier is aware of consumers' different reserve prices, albeit impossible in the past, has gradually become reality, owing to the rapid development of digital economy and the completeness of "user profiling." This makes differential pricing and big data discrimination by platform companies possible. For example, in 2000, customers of Amazon discovered that they could buy products at a lower price if they stripped their computer of the electronic

42 *Id.*

43 *Id.*

44 *Bundesgerichtshof bestätigt vorläufig den Vorwurf der missbräuchlichen Ausnutzung einer marktbeherrschenden Stellung durch Facebook*, Federal Court of Justice (June 23, 2020), https://www.bundesgerichtshof.de/SharedDocs/Pressemitteilungen/DE/2020/2020080.html.

45 *Facebook Loses Antitrust Decision in Germany over Data Collection*, The New York Times (June 23, 2020), *available at* https://www.nytimes.com/2020/06/23/technology/facebook-antitrust-germany.html#:~:text=the%20main%20story-,Facebook%20Loses%20Antitrust%20Decision%20in%20Germany%20Over%20Data%20Collection,its%20dominance%20in%20social%20media.

tags that identifies them as regular customers. Amazon denied personalising prices but refunded all customers who received higher prices.[46]

From the perspective of data protection law, the GDPR regulates automatic decision-making including user profiling, while other jurisdictions also give consumers similar protection, for example the *E-Commerce Law* in China. Usually such laws are centred on protecting users' right to know and choose. Nevertheless, in the view of competition law, the EU and China explicitly prohibit imposing differential treatment of pricing or other conditions on counterparties in the same circumstance. It means that even if user profiling is made and applied to differential pricing which complies with data protection law, such behaviour may still constitute an abuse of market dominance, which violates the competition law.

V. A RELIC IN THE NEW ERA: ESSENTIAL FACILITY DOCTRINE IN THE *HIQ V. LINKEDIN* CONTEXT

The final topic is about an old doctrine rooted in the U.S. antitrust law—the essential facility doctrine, which was stirred up by *hiQ Labs, Inc. v. LinkedIn Corp*[47] in a context totally different from how the doctrine was originated. Plaintiff hiQ Labs, Inc. ("hiQ") is a data analysis company that relies on LinkedIn's public profile information.[48] LinkedIn sent a cease-and-desist letter to hiQ to ask it to stop data scraping after being silent to hiQ's operating practices for several years.[49] In September 2019, the U.S. Court of Appeals for the Ninth Circuit affirmed the lower court's order granting a preliminary injunction barring LinkedIn from blocking hiQ from accessing and scraping publicly available LinkedIn member profiles to create competing business analytic products.[50]

Despite the significant implications this case, there had been, in fact, a number of cases concerning forced sharing before it. As early as 2013, a Finnish court ruled that a Finnish telephone number service company's refusal to provide users' information to other telephone directory distribution service providers constituted an abuse of market dominance. The court refused to accept the justified reason for data privacy and considered it neither sufficient nor true.[51] In China, there has not been any specific regulatory or litigated decisions by far. However, not long ago, with the spread of COVID-19 and the rapid growth of remote working applications, WeChat (a popular social media app) completely banned sharing the URLs containing relevant domains of ByteDance's Feishu,[52]

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46 Competition & Markets Authority (CMA), *Pricing Algorithms* (Oct. 8, 2018), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/746353/Algorithms_econ_report.pdf.

47 938 F.3d 985 (9th Cir. 2019).

48 *Id.* at 989.

49 *Id.* at 992.

50 *Id.* at 1005.

51 Organisation for Economic Co-operation and Development ("OECD"), *Annual Report on Competition Policy Developments in Finland*, OECD (May 15, 2013), http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/AR(2013)14&docLanguage=En.

52 *ByteDance's Feishu Blocked by WeChat, Tencent Has Not Responded*, Jiemian News (Feb. 29, 2020), https://m.jiemian.com/article/4047796.html.

which triggered a heated discussion regarding the boundary of "refusal to deal" under the Anti-monopoly Law of China. How does forced sharing of users' data or interfaces relate to competition laws, and under what circumstances will they contravene the essential facilities doctrine?

A. HiQ Decision Spelled out

The *hiQ* decision is not a judgment on substantive legal issues, but it touches on some points in competition law. hiQ claimed that LinkedIn unfairly leveraged its dominance in the networking market to attain anticompetitive advantages in the downstream data analytics market, in violation of California's Unfair Competition Law.[53] The Ninth Circuit ruled that, "if companies like LinkedIn, whose servers hold vast amounts of public data, are permitted selectively to ban only potential competitors from accessing and using that otherwise public data, the result—complete exclusion of original innovator in aggregating and analysing the public information—may well be considered unfair competition under the California Law."[54]

As of today, hiQ has only received the court's ruling in favour of a temporary injunction. "A plaintiff seeking a preliminary injunction must establish that he is likely to succeed on the merits, that he is likely to suffer irreparable harm in the absence of preliminary relief, that the balance of equities tips in his favour, and that an injunction is in the public interest."[55] However, two of the four elements for temporary injunction have bearings on the essential facilities doctrine.

First, hiQ claimed that its entire business model relies completely on the data from LinkedIn when hiQ proved that it would suffer "irreparable harm" if it couldn't obtain an injunction.[56] Neither the non-public resume information provided by users on other social networks nor requiring hiQ to invest time and cost to collect such data on its own are comparable alternatives.[57] It can be said that if LinkedIn refuses to share data, hiQ will be out of business.[58]

Second, when deciding whether to grant a temporary injunction, the court considered public interest in addition to the impact on the parties in the litigation. The court concluded that the public interest in supporting hiQ exceeded that of supporting LinkedIn, that is, "giving companies like LinkedIn free rein to decide, on any basis, who can collect and use data—data that the companies do not own, that they otherwise make publicly available to viewers, and that the companies themselves collect and use—risks the possible creation of information monopolies that would disserve the public interest."[59]

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53 LinkedIn's decision to send a cease-and-desist letter to hiQ occurred within a month of the announcement by LinkedIn's CEO that LinkedIn planned to leverage the data on its platform to create a new product for employers with some similarities to hiQ's Skill Mapper product.

54 *hiQ*, 938 F.3d at 998.

55 *Winter v. Nat. Res. Def. Council, Inc.*, 555 U.S. 7, 20 (2008).

56 *hiQ*, 938 F.3d at 993.

57 *Id.* at 993-94.

58 *Id.* at 994.

59 *Id.* at 1005.

These two points—"irreparable harm" and "risk of information monopoly"—closely link the case to the essential facilities doctrine in competition law.

B. Essential Facilities Doctrine in and Outside the U.S.

The essential facilities doctrine originated from the U.S. and was first established in *United States v. Terminal R.R. Ass'n*.[60] It was meant to require monopolists with essential facilities to open the facility for reasonable use by competitors. Over time, the essential facilities doctrine has developed to include four elements: (i) control of the essential facility by a monopolist; (ii) a competitor's inability practically or reasonably to duplicate the essential facility; (iii) the denial of the use of the facility to a competitor; and (iv) the feasibility of providing the facility.[61]

Within the framework of the EU competition law and the Anti-Monopoly Law of China, the essential facilities doctrine is treated as "refusal to deal" in abuse of market dominance cases. Two landmark EU decisions[62] lay out the standard for determining essential facilities: whether there is a legitimate basis for the refusal; whether the refusal will leverage the existing dominant position of the undertaking to another market; and whether the facilities are indeed "indispensable."[63]

China's Anti-Monopoly Law prohibits undertakings with market dominance from refusing to deal with counterparties without justifications. China enforcement authority's implementing rules add that, when evaluating refusal to deal by essential facilities, it is necessary to "consider the following factors together: the feasibility of investing reasonably to otherwise develop or construct the facilities, the trading partners' reliance on such facilities to carry out production and business operation effectively, the possibility of such undertakings providing such facilities, as well as the impact on their own production and business activities etc." The consideration of these additional factors echoes the above four requirements of the essential facilities doctrine from different perspectives.[64]

C. Examining the Doctrine in Big Data Context

Is it possible that data may constitute essential facilities? With the exception of the third element (i.e., denial of the use of the facility to a competitor), the other three elements are less likely to be met given the specific characteristics of data:

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60 224 U.S. 383 (1912).

61 *MCI Commc'ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1132 (7th Cir. 1983) (collecting cases).

62 Case C-7/97, *Oscar Bronner GmBH & Co KG and Others v. Mediaprint Zeitungs-und Zeischiftverlag GmbH & Co KG and Others* [1998] ECR I-7791; joined Cases C-241 & 242/91P, *RTE and ITP v. Commission*, [1995] ECR I-743.

63 Zhang Sulun, *The Application of the Essential Facilities Doctrine of Competition Law in Internet Industry*, J. Henan Normal Univ. (2017).

64 Article 16 of the Interim Provisions for Prohibiting Abuse of Dominant Market Position, promulgated by Order No. 11 of the State Administration for Market Regulation on June 26, 2019 and effective from September 1, 2019.

1. Control of the Essential Facility by a Monopolist

Although an enterprise of certain data assets can in a physical sense "control" the relevant data, whether the data is legally controlled by the enterprise or personal data subjects is an unsettled legal issue when personal data is involved. Take the *hiQ* case as an example. LinkedIn emphasises in its user agreement that users own the data content uploaded to LinkedIn by themselves, and LinkedIn only has a non-exclusive licence to use the data. In that case, the extent to which an enterprise can "control" the data by itself and can decide whether to share access to the data-related essential facilities without the intervention of personal data subjects is actually debatable.

2. Competitor's Inability Practically or Reasonably to Duplicate the Essential Facility

Whether the essential facilities are replicable require consideration of practical possibility as well as economic rationality. Personal data are hard to satisfy this requirement because of data's "non-rivalrous" and "intangible" nature, that is, providing users' personal data to one enterprise does not hinder providing the same datasets to another enterprise at the same time. Although there is a view that phenomena such as network effects prevent inferior competitors from effectively replicating data of the same size, there are also other characteristics—for instances, the unique multi-homing of users in the digital era and the importance of the timeliness of data—that make it difficult to argue that data assets cannot be effectively replicated.

3. Feasibility of Providing the Facility to Competitors

Similarly, the non-rivalrous nature of data seems to make it convenient and easy to provide data to competitors. Especially with modern technical conditions, it often simply means opening API (application programming interface) or even just "inactions" such as avoiding interception or encryption of public data. However, when data assets involve personal data, the regulation of personal data sharing has become the primary obstacle. In *hiQ*, LinkedIn once argued the privacy rights of users as a defense.[65] Although the court did not fully support LinkedIn because of the public nature of LinkedIn's data content, the court did recognise the value of this argument.[66] Considering jurisdictions with stricter regulations on personal data, such as under the GDPR in Europe, data sharing feasibility from the competition law perspective will be seriously weakened or just impossible.

For data assets not involving personal data, there seems to be a slim likelihood that the elements of the essential facilities doctrine can be satisfied. But when the doctrine is applied to personal data assets, the application of the essential facilities doctrine would face serious obstacles. The first is mandatory regulation of personal data. If personal data sharing must be premised on users' consent, the doctrine would be difficult to apply. Of course, jurisdictions have varying levels of personal data regulation. *hiQ* was litigated in the U.S. where personal data is relatively under-regulated and the verdict of the Finnish telephone directory case was long before the GDPR. Currently, due to the strict regulation on personal data in the EU and China, it is difficult to force any

65 *hiQ*, 938 F.3d at 994.

66 *Id.*

enterprises to open database. Another obstacle is to prove that enterprises that require forced sharing cannot practically or reasonably replicate the same datasets. In the dispute between WeChat and Feishu, even though WeChat has accumulated a large number of users, Feishu can hardly say that it cannot replicate the same user communities. What Feishu needs may be only a tipping opportunity—like the unexpected epidemic outbreak that enables workplace communication services to have a user surge. Therefore, in the digital age, the "essentiality" element of the essential facilities doctrine may have lost its foundation—economy of scarcity and scale as in the industrial era.

VI. CONCLUSION

Instead of directly answering the questions put forward in the beginning of this article, these cases illustrate sharply different approaches taken by antitrust authorities in different jurisdictions. Some are bold, like the Bundeskartellamt in the Facebook decision. Some are wary, like the Chinese authority reviewing Didi's acquisition of Uber China—concluding nothing almost four year after the transaction was completed. Some are attempting, like relating the *hiQ v. LinkedIn* case to the essential facilities doctrine.

The facts speak for themselves. Today in China, Didi still holds the dominant position in the ride-hailing market. There are new entrants, but the keen battle between Didi and Uber China never reappeared. The Facebook decision is fresh, so it remains to be tested in reality whether the decision can change the behaviours of Facebook and other data controllers in collecting and processing user data.

The good news is that authorities are looking for changes. Last year, the U.S. DOJ and FTC began to investigate Google, Amazon, Facebook, and Apple. The EU is considering revising its competition rules by tailoring them to digital platforms.[67] China is envisioning an overhaul of its Anti-Monopoly Law, the draft of which also includes changes to reflect its digital economy reality. At least, there is consensus among the authorities on the urgency to act. With the momentum and potentially new legal tools on the horizon, we may see a landscape reshaped.

67 *Margrethe Vestager Eyes Toughening 'Burden of Proof' for Big Tech*, Financial Times (Oct. 10, 2019), *available at* https://www.ft.com/content/24635a5c-fa4f-11e9-a354-36acbbb0d9b6.