Leadership of Big Tech Companies in the Data Market: Legal Opportunities and Antitrust Frameworks

Juliya Kharitonova*
Business law Department of the Faculty of Law
Lomonosov Moscow State University
GSP-1, Leninskie Gory, 19991 Moscow
Russian Federation
e-mail: sovet2009@rambler.ru

Larissa Sannikova
Institute of State and Law of the Russian Academy of Sciences
Znamenka 10, 119019 Moscow
Russian Federation
e-mail: 7718609@mail.ru

Abstract Digital markets development all over the world reveals trends of Big Tech companies' enhancement therein, both transnational and domestic. Applying innovations Big Tech companies can accumulate their users' data enormously and then process them, which finally constitutes a highly demanded product known as Big Data. There is no uniformed approach to Big Tech companies' activity. Doubts arise about preserving fair competition in digital markets, while online platforms and over Big Tech companies hold power concentration. It should be noted that the legal criteria of links between the market influence of Big Tech companies, especially online platforms, and their anti-competitive actions must be determined. This paper substantiates the Big Tech companies' leadership in digital markets is to be considered through antitrust law. Thus, "Big Data dominance" doctrine reasoning why it is essential to regulate within antitrust law Big Tech companies' activities as online platforms in the data market should be developed. Special attention is devoted to the specifics of Big Tech companies being online platforms operating. Their activity in the data market gives rise to some network effects that should be considered while developing new criteria for dominance in digital markets. At the same time, network effects act as access barriers to large online platforms, and, consequently, to the Big Data that they accumulate. The Big Data is crucial for the incorporation and expansion of data-based businesses, as well as for improving public services rendering. Therefore, ensuring non-discriminatory access to the big data becomes a vital task, the development of the digital markets depends on. At the same time, the use of Big Data should not infringe on the rights of the citizens to protect data achieved through anonymisation. While enormous aggregation of data grows in its significance for businesses and private individuals, different states are seeking to provide appropriate legal regulation for Big Data application by digital platforms. The article calls for antitrust laws uniquely tailored to the tech industry in order to democratize access to data and provide room for future disruptors to enter the market. The question arises whether a balance for legal restrictions for access to anonymised data, personal data, and freedom of enterprise and business. Herein, the promotion and marketing of goods and services are noteworthy.

Keywords: leadership, Big Tech companies, data market, legal opportunities, antitrust framework

1 Introduction

According to The Economist (2017), the Internet titans—Alphabet (Google's parent company), Amazon, Apple, Facebook, and Microsoft—look unstoppable. They are the five most valuable listed firms in the world. The Big Tech companies have individually and collectively engaged in an unprecedented number of acquisitions.

Big Tech companies' leadership is strongly tied with technologies allowing them to make quick and reasonable decisions responding to rapid business changes. Data-Driven refers to a data-based managing approach. Its touchstone is to ground decisions made on figures analysis, not personal experience or intuition. What proves Big Tech titans' dominance on the market is the possibility to collect and process gross aggregation of data.

Digital market development all over the world reveals trends of Big Tech companies' enhancement therein, both transnational like Amazon, Apple, Google, and domestic like Yandex, VK (Russia), Aruba S.p.A., KataWeb S.p.A (Italy), Siemens, BMW (Germany). Applying innovations Big Tech companies can accumulate

their user's data in an enormous amount and then process it, which finally constitutes a highly demanded product known as Big Data.

There is no uniform opinion about Big Tech companies' activity. On the one hand, they are the drivers of economic development, introducing high tech products on the market, determining their position, on the other, they displace and consume other companies proposing innovation products being disruptive for them. Firstly, it is about online platforms as Big Tech companies.

Accordingly, online platforms serve as the primary data accumulators, not only collecting but also analysing and distributing both commercially and non-commercially. In the internet space, these business entities have turned to be rather widespread as earned influence on service and product markets substituting fully any intermediaries existing. So, Uber, as well as similar service aggregators, undoubtedly prevails on traditional taxi operators, while social networks are collecting much data on their users to turn them into a commodity for advertisers interested or products and services manufacturers.

As a matter of fact, doubts arise about preserving fair competition on digital markets, while online platforms and over Big Tech companies hold power concentration. It should be noted that the legal criteria of connection between the market influence of Big Tech companies, especially online platforms, and their anti-competitive actions must be determined. Meanwhile, most risks of the data market abuse arise from online platforms operation.

In July of 2019, the European Union introduced new rules providing businesses with a more transparent, fair, and predictable online business environment, as well as an efficient system for seeking redress. The regulation adopted by the Council addresses relations between online platforms and businesses.

2. The essence of the network effects of large online platforms

The extent of competition between online platforms in the data market is primarily determined by network effects, which reveal the relations between the cost of service for a user and other users' actions. In foreign economic and legal literature, for example, Veljanovski (2007), Johnson (2019), Bourreau and De Streel (2019), or Robles (2017). The essence of network effects, as well as the application of antitrust legislation to regulate network effects and the possibility of using existing antitrust tools, are determined and discussed.

Antitrust law is intended to reduce prices by increasing the number of competitive entities. While within the complex innovation market, a product is turning available for consumers for different reasons. Primarily, the network effect of such market should be considered, provided that product's value is growing together with the number of new users joined. On a related note, the right holders have to reduce the access fees or keep it almost the same to encourage new users to join, enhance using scale, and obtain respective profits (Kadar 2015).

On a par with, complex innovations markets (telecommunications, digital technologies) require various unique internet systems interaction to ensure innovative development.

Against this background, lawyers are seeking to set restrictions for network effects occurring in the respective field.

Moreover, Russian legal experts recognize the existence of network effects in the data market (see, for example, Ivanov 2018), but this issue has not been the subject of a separate study. The lack of scientific research did not allow the Russian Antimonopoly Agency to fix the definition of network effects in the draft of the Fifth Antimonopoly package, which would accurately reflect the essence of this phenomenon.

Thus, the struggle for monopoly on network markets, firstly, stimulates innovative development, secondly contributes to the price reduction. One more such market feature as "rapid and destructive" innovations is noteworthy (Adner and Zemsky 2003). New participants are capable of destabilizing pre-existing operators by introducing highly innovative products.

What is more, the new technologies promote the electronic form of economic relations, as well as the process of intangible goods creating, characterized by network structure, low cost, and rapid response rate. Thus, the network removes socio-political and economic restrictions from economic entities, allowing them to strive for new economic prospects.

In this regard, the study of the network effects of online platforms within this project as a critical factor for the development of competition in the data market will be important not only for the development of Russian competition law but also for the improvement of Russian antitrust legislation.

3. The Big Data as a digital asset in digital markets

Big Data market antitrust regulation is also required because of using enormous data amounts, known as Big Data, for business and public administration within the digital economy field. Big Data includes various information, not only personal or other private data. Both state and private individuals possess enormous amounts of various data either systematized or non-systematized, becoming valuable after respective treatment, performed by online platforms.

For example, the processed information about a person refers to a digital profile or "profiling" as under the European GDPR regulation. According to the provision 4 of the Article 4 of the respective Act 'profiling' means any form of automated processing of personal data consisting of the use of personal data to evaluate certain personal aspects relating to a natural person, in particular, to analyse or predict aspects concerning that natural person's performance at work, economic situation, health, personal preferences, interests, reliability, behaviour, location or movements. Under certain scholars, the proprietary approach to the data reveals four elements like control, protection, evaluation, or distribution of personal data supporting personal data monopoly introducing. (Janeček 2018).

Big Data as a digital asset distinguishes by the mobility of their content and the target application of information blocks, which makes their legal protection difficult. Russian scientists (Kharitonova 2019; Sannikova and Kharitonova 2018; or Sergeev and Tereshchenko 2018) are actively discussing the legal nature of Big Data. Foreign scientists are also trying to develop some conventional approaches to the definition of Big Data, for example, De Mauro, Greco and Grimaldi (De Mauro et al. 2016).

Nowadays amending of the regulation model is on the agenda, while the information shall not only be considered as the civil law object but also data circulation is to be legally regulated considering the value for market participants. Gradually, such changes drivers involve the legal necessity:

a) to allow the existence of such an object possessing certain value, as blocks of information, grounding the Big Data concept, as a digital asset;

b) to recognize the dualism of right to data, while the data owners have a constitutional right to their data, while the entities processing the data, the data controller, has the right to dispose of the corresponding digital asset;

c) to separate by the law which data is considered as personal and subject to strict anonymization before being put into circulation, and which data can be recognized as public.

Research on the Big Data through antitrust law (Sokol and Comerford 2016; Colangelo and Maggiolino 2017) is the most interesting. Not all the data ownership, but antitrust authorities monitor only the Big Data ownership. Some entities hold ownership or supply data. However, it is not a reason to expand their market power.

Developing Big Data concept in the legal field, including the establishment of criteria that such data sets shall meet, will allow separating fair market participants owning data or Big Data, and those companies owning Big Data and preventing free access to them in bad faith, thereby abusing their position in the market. Restrictions on access to Big Data can be considered as a case of unfair competition.

4. Non-discriminatory access to Big Data

In this regard, attention in the studies is devoted to the matters of ensuring the right of access to Big Data. As for "Big Data for ALL" it proves the importance of providing individuals with access to their data in a usable format. This will let individuals share the wealth created by their information and incentivize developers to offer user-side features and applications harnessing the value of Big Data (Tene and Polonetsky 2012). However, the definition of Big Data as a public good, which should be publicly available, is subject to the reasonable critic. As Taylor (2016) highlights, Big Data is "high value as a proprietary resource that contains insights about business processes and customer preferences as well as the potential for professional learning and positive perceptions on the part of customers and governments—and this value is balanced by a high negative potential for the firm if the data are misused" (Taylor 2016). Thus, companies are interested in Big Data control. The solution to this problem is to find the optimal balance between private and public interests when using Big Data. This balance can be reached by developing non-discriminatory access conditions for Big Data.

Nowadays, disputes arise in different jurisdictions' practice, whether online platforms' rights and data holders can be protected in the field of Big Data companies service market. Mostly it is about matters of storing, collecting, analysing, and selling of personal and private data. However, not only data can be involved.

The first and unfinished case in Russia is a dispute of the social network operator VKontakte versus Double LLC, accused of illegally accessing the social network's database.

As for the dispute, Double LLC allegedly carried out illegal, automated extraction and usage for commercial purposes of open data posted by users within social networks. As an argument against the Double activity, the Russian social network points to its monopoly of IP rights to the content of the database with user data (the Database sui generis right). Proving the exclusive nature of VKontakte's right to user profile data, the defence draws an analogy with the rules on the inadmissibility of using others intellectual activity result and assigning the results of financial and professional investments made in obtaining and collecting database content following paragraph 39 of Directive no 96/9 / EC of the European Parliament and the Council of the European Union "On the legal protection of databases".

The defendant appeals to the spin-off doctrine, which is as follows: databases formed by the company in the course of its main activity as a by-product and not required independent investment into the search, collection, and verification of these data are not protected.

This theory was developed and considered by German scholars (Rieger 2010). However, today there is no consensus on the need to apply the «by-product» approach, which was noted at conferences. Additionally, some scientists put forward strong arguments against the application of the spin-off doctrine.

While considering a similar dispute in the USA in 2019, the federal appeals court has ruled that LinkedIn must allow hiQ, a data analytics firm, to scrape user data from public profiles—at least, for now. The appeals court found that "hiQ's interest in continuing its business" outweighed users' privacy interests in their profile information.

German courts practice also considered disputes on online platforms' data monopoly. As an example, the Higher Regional Court of Düsseldorf suspends the decision of the German Competition Authority, which prevented data gathering practices from a social network company *(Facebook)*.

Previously, the German Higher court has already faced the problem of data in social networks in the context of disclosure of the profile of a deceased person. Facebook accounts could be inherited. The final decision stated that access to the account and the information contained is subject to the personal correspondence legal regime. That is, the relevance of the data monopoly today is not limited to the concept of Big Data, but is also related to the problems of monitoring the distribution and use of personal information, compliance with the constitutional rights of citizens, and intellectual property rights.

Thus, the law enforcement problems of Russian courts overlap with the issues of foreign judicial practice. However, due to the supranational nature of relations on the Internet, their resolution cannot be exclusively country-specific, it is reasonable to develop common approaches to such problems.

5. Legal issues of Big Data anonymisation

Another aspect of the open data problem is to ensure the confidentiality of user data while using Big Data (Fairfield and Engel 2015). Reasonable Big Data market requires to establish the right on data protection while keeping the presumption of consent on the collection and protection of data for commercial purposes. The development of this field should lead to the development of the legal structure being the constitutional right of citizens to anonymize treated data. It also should be considered that anonymization is executed with the application of technical means, which requires research on the problems of anonymization as well as capabilities of modern technologies (including AI) and the prospects for their development (Kharitonova 2019).

Data confidentiality protection is strongly tied to the digital asset's value. Data anonymizing is contributing to avoid infringements of rights of legal entities and natural persons' rights as data subjects. Russia plans to allow the use of information about citizens without their consent. The amendments to the law "On personal data protection" impose the data holders with the obligation to anonymize data not to permit a person's identification with no additional information provided. These novelties are to be the driver of Big Data market development. Moreover, it will contribute to public services improvement, as public transport stops convenient locations, the emergence of vital schools and hospitals, etc.

Moreover, the idea arose to trade data of smart cars owners (more than 40% of Russian fleet or more 20 million units) for the sake of targeted advertising campaigns of car dealers, tech centres, and online stores. It is assumed that the information about the car, as well as its routes, will be voluntarily exchanged for some discount on service and goods.

These novelties concern the rules on collection, storing, treatment, and distribution of personal data or other private data. Notably, the data to be depersonalized involve geolocation, gender, age, and average revenue per user (ARPU). While Internet companies can add data about users' interests and search history, as well as online purchases, use of various digital services, including information about the customer accounts status.

However, large blocks of data can also be obtained for commercialization non-concerning the individual's interests. It involves data from technical sources, creating about 90% of all new information (Internet of things, artificial intelligence, machine learning), as well as various kinds of statistics, etc. Due to the Internet of things, any device — starting with a toaster to an aircraft engine - is now a data source. However, according to some evaluations, only 20% of data is available on the Internet, while the remaining 80% is stored within the companies and enterprises (Vanian 2016). However, as for the Russian data market, the state is the owner and operator of a significant amount of mostly unprocessed data to make them more accessible to processors.

The personal data are to be anonymized before processing, while the public data can form digital assets without any additional requirements to their legal regime.

The legal responsibility for violation of the obligation to anonymize personal data should be stipulated together with mandatory personal data anonymization. Here the possible established link between the person's behaviour and the privacy limits, protected by law, like secrecy of correspondence as a part, is on the agenda.

There is always a problem with identifying personal data and establish relevant criteria because of data mobility. Since data considered as non-personal to date can turn into personal in the future (due to analytical and technological achievements). Thereby, the area of conflict between data privacy and data trade supporters is expanded. However, the questions arising can be replied on the ground research in the field of ethics, not just law. Nevertheless, it is already clear that the law cannot resist the recognition of Big Data as digital assets possessing value and intensively applied in circulation as an object (Kharitonova 2019).

6. Problems of antitrust regulation of the data market

Legal literature stipulates the possibility of antitrust regulation of the data market considering arising judicial practice. The court of justice of the European Union strictly distinguishes competition and data protection laws. As noted by researchers, "mixing these two areas would be an unwarranted expansion of the scope of competition law. The purpose of competition law, after all, is not to protect the consumer from data privacy infringements, but to protect the competitive process itself" (Volmar and Helmdach 2018; Colangelo and Maggiolino 2017). It should be noted that this approach is supported not only by European but also by American legal researchers (Ohlhausen and Okuliar 2015; Cooper 2012). Russian research does not take the possibility of antitrust regulation of the data market into doubt. However, proposals of the Federal Antimonopoly Service of Russia on regulating the activities of online platforms within the Fifth Antimonopoly package have not found support in the scientific community.

Nevertheless, the activity of antitrust regulators in Germany and Russia proves that the data market objectively requires antitrust regulation for more active and balanced development of the digital economy. Legal scholars' scepticism about the feasibility of antitrust regulation in the field of Big Data is due to insufficient research on the conditions and consequences of such regulation. It is reasonable to mention Sokol's opinion, that "not enough work has yet been done to thoughtfully study and analyse how antitrust could, or should, be applied to specific issues involving Big Data" (Sokol and Comerford 2015).

In our opinion, related to Big Tech companies Big Data's concentration problems' scope includes network effects arising at the data market; Big Data features like digital asset; access options to Big Data of other market participants; data anonymization means to protect personal data. These problems are to be solved within the framework of a single, consistent doctrine of "Big Data dominance", which would theoretically justify the antitrust regulation necessity of the Big Tech companies being online platforms operating in the data market.

The development of the "Big Data dominance" doctrine compels to study a wide range of issues arising in the data market and the features of their legal regulation, including antitrust one. Particular attention should be paid to the specifics of Big Tech companies being online platforms operating. Their activity in the data market gives rise to some network effects that should be considered when developing new criteria for dominance in digital markets. At the same time, network effects act as access barriers to massive online platforms, and, consequently, to the large data that they accumulate. Big Data is essential for the incorporation and expansion of data-based businesses, as well as for improving public services rendering. Therefore, ensuring non-discriminatory access to Big Data becomes an important task that the development of digital markets depends on. At the same time, the use of Big Data should not infringe on the rights of citizens to protect data, which is achieved through anonymization.

7. Conclusions

According to our results stemming from this study, the leadership of Big Tech companies in the digital market, including the data market, gives rise to the problem of their dominance, including unfair. Modern researchers face the fundamental scientific task to substantiate in theory the conditions and limits of antitrust regulation tools to prevent Big Tech companies from abusing their dominance in digital data markets.

This approach will assist revealing signs of abuse of the dominant position of Big Tech companies in the data market and develop measures that ensure non-discriminatory access of other market participants, government, and public structures to the Big Data accumulated by Big Tech companies.

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