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CARTELS IN THE DIGITAL ERA: CHALLENGES AND OBSTACLES

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Abstract. *Cartels agreements are contracted between market participants with the aim of hindering, restricting or distorting competition. The paper first provides a definition of cartel agreements and their categorization, with reference to the most common types of cartel agreements. The author elaborates on the price algorithm, as one of the most prevalent forms of competitors' collusion in the digital domain. Given that the digital age provides infinite opportunities for contracting illegal agreements and competition distortion, the author presents the challenges and obstacles enountered by national competition authorities in various countries, and describes how they established effective mechanisms to combat cartels. In particular, the author refers to the amended German Act against Restraints of Competition, by means of which Germany became the first country in Europe to introduce radical measures in the battle against technological giants, whose economic power frequently exceeds the power of states. Finally, the author underscores the need for the states to work together to combat digital cartels.*

Key words: *competition, cartels, digitalization, cooperation, challenges, obstacles*

1. CARTELS AS A FORM OF DISTORTION OF COMPETITION

1.1. Traditional forms of cartels

Market competition can be distorted in a variety of ways. Cartels are one of the most severe forms of competition distortion. Customers are injured when companies enter into cartel agreements by raising product prices, limiting product supply, fixing prices, and colluding not to compete. Despite the unambiguous conceptual definition of a cartel providing clear guidelines for recognizing illegal business practices, the process of uncovering and sanctioning cartels is a difficult task. Cartel agreements can involve a large number of companies, making it difficult for product buyers to detect the presence of a

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cartel in certain company behavior. One of the most effective anti-cartel mechanisms is the Leniency Program. It provides benefits to cartel members who cooperate with competition authorities, the most important of which is the possibility of reducing the fine. This mechanism is used by most member states of the Organization for Economic Co-operation and Development to uncover and sanction cartels (OECD, 2000).

Cartel agreements are generally classified into horizontal and vertical agreements. Horizontal agreements are concluded between market participants who operate at the same level of the manufacturing, distribution, and sales chains. Vertical cartel agreements are concluded between market participants at various stages of the production, distribution, or sales chain. In terms of arrangement types, there are four fundamental types of traditional cartel agreement (Competition & Consumer Commission Singapore, 2019):

1) Price-fixing agreements

This is an extremely sophisticated method of distorting competition in which the competitor agrees on price-fixing not only in writing but also orally (which is more common in practice). For example, an informal agreement on product pricing can be reached between company representatives at various social events. This type of arrangement is extremely difficult to detect and process because verbal pricing leaves no paper trail (OECD, 2007).

2) Bid rigging

Bid rigging is defined as the mutual agreement of competitors on who will win the tender. It occurs when one of the participants in a cartel withdraws from a tender, withdraws a bid, or makes a bid with a disproportionately high price or unacceptable conditions. In contrast to the former, such cartels are easier to identify and prosecute.

3) Market segmentation

Market segmentation causes competition distortion because competitors enter into agreements that allocate the market based on different criteria. Thus, when the parties to the agreement agree to sell certain goods exclusively in the part of the market covered by the agreement, the market may be divided according to geographical criteria. As a result, competitors are establishing as many independent local markets as participants in the agreement.

4) Production control

One way for cartel participants to distort competition is to reach agreements on the quantities of products to be placed on a given market. Cartelists indirectly influence price increases and thus profit maximization by controlling the quantity of products available.

These are traditional types of cartel agreements that have taken on new life in the age of digital markets. The term “digital markets” refers to markets in which companies develop and apply new technologies to existing business models or create new services using modern technological advances (World Economic Forum, 2019). Therefore, in order to fight cartels, national competition agencies need to coordinate their efforts on a global scale as it is necessary to acknowledge that stopping unlawful market participants' conduct is a global issue.

1.2. Digital cartels as a modern form of competition distortion

The 21st century has brought a significant step forward for humanity in the field of science and technology. Many technological advances have created previously unimaginable opportunities in everyday life. The term “Fourth Industrial Revolution” is frequently used to describe the current period in the development of humankind. This revolution fundamentally

changes the business model in every industry. While some industries are adapting faster than others, the digital era will undoubtedly shape the global economy in the long run (Deloitte, 2017). However, technological progress and economic digitization are not always beneficial to market competition. Companies attempt to keep up with the technological development trends in order to make their illegal activities aimed at distorting competition as invisible as possible to competition authorities.

In response to the challenges of uncovering and sanctioning cartel agreements in the digital age, countries conduct detailed market analyses to determine the extent to which existing anti-cartel mechanisms are applicable in the digital economy (Ashurst, 2019). Digital cartels have evolved into one of the most sophisticated forms of competition distortion, necessitating the modernization of competition authorities' personnel and technology to effectively combat cartels. Big Data and algorithms are two terms that may help to explain the essence of digital cartels. Big Data refers to a significant increase in computing capacity that enables storing massive amounts of data. Companies are increasingly storing massive amounts of consumer data, as the analysis of consumer conduct and preferences is at the core of market participants' economic decisions. Consumer data are analyzed by using modern algorithms that predict demand for specific products, price changes, or consumer behavior (International Competition Network, 2020).

Digital cartel agreements are increasingly popular among businesses. Although there is no direct corporate involvement in this process (so that it may appear that reaching an agreement using data analysis algorithms is legal), the regulator sees things differently. From a legal standpoint, using pricing algorithms when negotiating cartel agreements has the same effect as the cartel members directly negotiating cartel agreements. Specifically, computers' role is to make it easier for companies to obtain the information required to enter into an agreement, whereas the responsibility for entering into an agreement remains with people because they are the ones who negotiate the prices (Freshfields Bruckhaus Deringer, 2017: 1).

2. Uncovering and Sanctioning Digital Cartels

2.1 Challenges and obstacles to uncovering digital cartels

Cartels are difficult to uncover and even more difficult to dissolve. The first question that competition authorities consider when investigating cartel agreements is whether or not the products in the sector in which the cartels operate are homogeneous. In other words, if the products offered by cartel participants are homogeneous (i.e. the same), the cartel agreement (and thus its uncovering) is more likely to occur. However, as cartelists employ increasingly sophisticated collusion techniques, cartels are uncovered in the vast majority of cases through customer complaints and mitigation programs rather than economic analysis of agreements entered into by regulators in cases of suspected cartel behavior. Economic analysis can be used to detect suspicious corporate behavior, but it lacks the concrete evidence required to dissolve cartels and prosecute cartel members (Harrington, 2005: 3).

It is far more difficult to uncover digital cartels than traditional cartels. Several issues may be the focus of intense scrutiny by competition authorities. One of the challenges is the use of digital price negotiation tools to determine cartelists' consent. Modern communication technologies enable cartelists to reach agreements without exchanging messages explicitly supporting the existence and content of the cartel agreement. Competition authorities could use consumer preference data and algorithms to identify the existence of the cartel in the absence

of will, which is the primary evidence of the origin of the cartel agreement. This should only be regarded as a tool for uncovering cartels. Competition authorities may start their analysis of the data by speculating that the cartelists' "knowledge of the existence of a legally impermissible outcome of the agreement" may be proof of wrongdoing. However, given that the mere existence of an exclusive intent to conclude a cartel agreement is admissible evidence against the cartelists, this position cannot be legally acceptable (Herbert Smith Freehills, 2020).

Collecting and processing large amounts of data on consumer preferences, as well as analyzing the algorithms used to fix prices based on the collected data, is a difficult task even for the most technologically advanced competition authorities. Companies that approach data collection and processing (and use algorithms) to perform illegal actions are aware that digital evidence exists for every action taken. When a cartel is suspected, competition authorities use investigative techniques that are common in the field of competition law. The most effective method is an unannounced competition investigation (Dawn Raid) by the competition authority, which involves the authority of authorized persons to appear at any time at the company's headquarters and demand access to all business documents, contracts, notes, and even informal correspondence between business partners.

The fact that digital evidence can sometimes be more difficult to destroy than physical (paper-based) evidence gives this method a benefit in the case of digital cartels. Competition authorities must keep in mind that digital cartels, which are much more technologically advanced than traditional cartels, require significant financial outlays to implement the detection measures in order to fully benefit from this method of uncovering cartels. Numerous competition authorities have set up specialized cartel detection units made up of forensic experts capable of recovering deleted or damaged data (International Competition Network, 2020).

3. Comparative Analysis of Digital Cartels in the Russian Federation and the United States Of America

3.1. Competition Law regulation and sanctioning digital cartels in the Russian Federation

The fundamental law governing the field of competition protection in the Russian Federation is the Federal Law "On Protection of Competition"(2006).[1] The Federal Anti-monopoly Service (hereinafter: FAS) was established as a federal executive state body in charge of monitoring antitrust law implementation, which was passed on 26 July 2006 (International Competition Network, 2018). This law governs traditional forms of competition distortion that existed long before the market structure changes brought about by the digitalization process.

On the other hand, traditional business models have long been a relic of the past, and legal solutions that fail to account for technological innovations brought about by the rapid development of digitalization are largely obsolete in the 21st century. No longer can market competitors promote their products solely through billboards or television commercials. The participant in the market competition who uses digital platforms for business purposes gains a competitive advantage, keeping in mind that information and how it is transmitted (rather than product ownership) is at the core of understanding the concept of modern market power.

On 9 May 2017, President of the Russian Federation Vladimir Putin issued Presidential Decree No. 203 "Strategy for the Development of the Information Society in the Russian

[1] Federal Law No. 135-FZ of 26 July 2006 on the protection of competition (as amended up to Federal Law No. 11-FZ of 17 February 2021), WIPO IP Portal

Federation for the Period 2017-2030" in response to the need for modernization of Russian competition law.[2] This document provides guidance for the development of information technology in Russia during the specified time period, in order for the Russian Federation to achieve "digital sovereignty" (Litvinenko, 2021: 6). The goal of enacting this act is reflected in creating the normative bases for the development of the digital economy, which is a significant improvement in relation to the regulations enacted between 1999 and 2008.

It should be noted that although Russian antitrust law does not define the term "price algorithms", this idea has solidified in the Russian competition protection practice, in cases of antitrust violations. Price algorithms are one of the common forms of competition distortion in the digital world. One of the most well-known examples of using algorithms to distort competition involved LG Electronics RUS LLC. On 21 February 2017, Russian competition officials conducted an unannounced inspection of the company's premises, interviewing employees and managers about indications of a secret agreement and coordinated activity between this company and mobile phone sellers. On 26 February 2018, LG Electronics RUS LLC was found to have used special software-pricing algorithms created by the company and other entities to coordinate the economic activities of LG smartphone sellers between 28 November 2014 and 15 February 2017; thus, they violated Article 11 paragraph 5 of the Federal Law "On Protection of Competition". LG Electronics RUS was fined 2,500,000 rubles. The examples of LG Electronics RUS LLC's distortion of competition are as follows:

- creating recommended selling prices of LG smartphones, which are published on the website http://www.lg.com/ru and communicated to sellers;
- putting pressure on sellers to comply with smartphone recommended selling prices;
- sanctioning (suspending smartphone shipments) sellers who refuse to agree to the recommended sales prices (OECD, 2019).

One of the mechanisms of competition distortion unique to the field of public procurement is the use of so-called "auction robots". The auction robot is a supplemental function (special software module) of the auction participant's personal account on a digital platform. It allows price proposals to be submitted automatically during bidding up to a certain threshold, based on instructions for the electronic document filled out with the auction robot's settings and signed with the bidder's electronic digital signature. In general, using an auction robot is legal; however, participating in a bidding process by using an auction robot with intent of increasing, decreasing, or maintaining prices as a result of collusion is not. In one of the most well-known cases involving the use of "auction robots", the companies "VALIRIA" and "E-gamed" violated Article 11 paragraph 2, item 1 of the Federal Law "On Competition Protection". These companies took part in the procurement of medical supplies for public health institutions. The FAS discovered that they used special software (auction robots programmed to automatically maintain maximum prices) to keep prices stable at 14 auctions, totaling more than 195 million rubles (Sokolovskaya, 2018).

In response to increasingly sophisticated forms of digital competition distortion, the Russian regulator established an automated information system for uncovering anti-competitive agreements, known as "Big Digital Cat", by Order no. 904/19 dated 3 July 2019.This system is an automated screening and scoring program for uncovering and proving cartels, allowing big data to be received and analyzed automatically through open

[2] Decree No. 203 of the President of the Russian Federation of 9 May, 2017 on the Strategy for the Development of the Information Society in the Russian Federation for 2017-2030, Boris Yeltsin Presidential Library, Administrative Law, Integrated digital environment of knowledge in Russia

and closed communication channels, to systematically identify anti-competitive agreements and form an evidence base (OECD, 2020).

3.2. Competition Law regulation and sanctioning digital cartels in the United States of America

The United States has the world's most developed competition policy. Congress passed the Sherman Act in 1890, the first antitrust law, as "a comprehensive charter of economic freedom aimed at preserving free and unfettered competition as trade rules". In 1914, Congress passed two other acts: the Federal Trade Commission Act, which established the Federal Trade Commission, and the Clayton Act. These are the three basic federal antitrust laws that are still in effect today, with some changes (Federal Trade Commission, 2013). Given that the USA is home to some of the world's most powerful technology companies, it was only natural for this country to be at the forefront of the modern economy's digitalization. As a result, companies operating in the US territory were unavoidably the perpetrators of undesirable market participant conduct.

One of the most well-known cases of price-fixing using an algorithm was discovered during a US Department of Justice investigation, and it involved the tacit agreements of cartel participants who, using specific software, fixed prices on posters sold on Amazon Marketplace (Kozlova, Kozhemyakin, Sergcheva, Bortenev, 2021: 4). This case is an excellent example of a violation of free-market competition rules in the digital market in the United States. David Topkins, the director of an online poster company, was found guilty of violating Section 1 of the Sherman Act by using pricing algorithms with other participants, with whom he was in collusion to coordinate poster prices. In a settlement made with the Department of Justice, Topkins was fined $20,000. It is obvious that the sentence imposed on Topkins is incredibly mild when taking into account the Sherman Act provisions, which call for a maximum sentence of ten years in prison and a fine of one million dollars. However, the comparatively low volume of trade in question (estimated at $575,000 in Topkins' court submissions) was a crucial consideration taken into account by judges under the Sentencing Guidelines (Krotoski, Ren, 2019).

The *Meyer v. Kalanick* case (2016)[3] is another well-known case of price fixing employing a price algorithm. In particular, Travis Kalanick, the executive director of the company Uber at the time, worked as a driver for that company. A Connecticut resident Spencer Meyer alleged that the Uber app permitted independent drivers to establish unauthorized charges. Spencer Meyer's statements were found to be substantial justification for presuming the existence of the agreement by the US District Court (Southern District of New York), which also found that the driver and Trevis Kalnik had a vertical agreement that established the price for Uber rides.

4. SANCTIONING DIGITAL CARTELS AT THE INTERNATIONAL LEVEL

4.1. The need for cooperation at the international level

The digital economy, as a cutting-edge framework for all economic activity in the 21st century, poses a high risk of distorting competition. In other words, it serves as a breeding ground for the development of anti-competitive behavior, for the uncovering and sanctioning of which traditional methods used by national regulators are no longer

[3] Case 1:15-cv-09796-JSR *Meyer v. Kalanick ;* United States District Court, Southern District of New York (2016); *https://law.justia.com/cases/federal/district-courts/new-york/nysdce/1:2015cv09796/451250/37/*

adequate. Given that digitalization is a continuous process that affects all sectors of the economy, regardless of economic progress or legal system development, every country is required to collaborate with other countries in the fight against ample forms of competition distortion in the digital arena. The daily lives of individuals all over the world are impacted by the global reach of digital platforms.

As a result, there is an urgent need for collaboration among antitrust authorities at the bilateral, regional, and international levels in order to address the problems posed by the digital economy and overcome the negative consequences of using digital platforms (*Организация Объединенных Наций*, 2019). However, obstacles and constraints keep national competition authorities from effectively cooperating in the battle against digital cartels. For instance, the level of progress made in the field of confidential data protection has a significant impact on the quality of international collaboration. The main reason for this limitation is that laws in most countries prohibit sharing sensitive information with other competition authorities, and some countries expressly prohibit information exchange in order to maintain confidentiality (International Competition Network, 2013).

4.2. German approach to sanctioning digital cartels and German-French cooperation

In Germany, the issue of pricing algorithms and robots distorting competition is a major concern. Recognizing the potential for artificial intelligence (hereinafter: AI) to pervade all aspects of society, the German government adopted the Artificial Intelligence Strategy in 2018, which was updated in 2020 (The Federal German Government, 2020). The recommendations for improving the AI system are the essence of this document, with the goal of making them more transparent and credible so that market participants' competition is fair and based on the principles of modern market economy. One of the document's key messages is the need for closer collaboration with EU institutions, particularly the European Commission and Member States, particularly in developing a framework governing the use of AI in the digital single market and implementing a European AI strategy.

In response to the European Commission's request for contributions to the Discussion on Competition policy in the digital age, the German Monopoly Commission drafted a document titled "Shaping Competition Policy in the Digital Age", presenting its proposals for improving the battle against competition distortions through the use of pricing algorithms (*Monopolkommission,* 2018). The importance of increasing consumer protection associations' participation in combating price algorithm abuse is emphasized, among other things, because transparent pricing is ultimately in the best interests of consumers. In this regard, it is not sufficient to investigate only cases where the competition authority believes that an investigation is necessary due to the existence of secret collusion that may violate competition rules.

The French competition authority (*Autorité de la concurrence)* and the German regulatory body (*Bundeskartellamt*, Federal Cartel Office) collaborated on the Algorithms and Competition project, which addressed the potential risks that pricing algorithms pose to free-market competition and made recommendations (Bundeskartellamt, 2020). The business context in which the algorithm was used should be the starting point for the price algorithm analysis. Of course, the true motivations and incentives for implementing the algorithm must be established first. The antitrust authority's investigation could also include a detailed examination of how the algorithm works technically, which could provide valuable evidence of anticompetitive behavior.

4.3. Sanctioning digital cartels at the European Union level

Consumer electronics companies (Asus, Denon & Marantz, Philips, and Pioneer) were the actors in one of the most well-known cases of price-fixing as a form of competition distortion at the European Union level. In particular, they contributed to the maintenance of a fixed or minimum selling price of products by limiting their retailers' ability to set retail prices for widely used consumer electronics products, such as kitchen appliances, laptops, and other technically sophisticated devices. If the sellers of their product deviated from the agreed-upon price and sold the product at a lower price, the producers resorted to a variety of sanctions, including threats to cut off supply. They set their prices using pricing algorithms that were automatically adjusted to match the prices of their competitors' products (European Commission, 2018).

5. AMENDMENTS TO THE GERMAN ACT AGAINST RESTRAINTS OF COMPETITION

5.1. Key provisions of the Act

On 14 January 2021, Germany adopted the 10th Amendment to the German Act Against Restraints of Competition[4] in order to improve consumer protection, taking a step forward in the so-called Fourth Industrial Revolution. The need to limit the excessive power and potential for market abuse of US technology giants (such as Apple, Google, Microsoft, and Amazon) was one of the German legislator's main ideas. Some of the measures in this legal text are as follows:

- more stringent regulation of all digital platforms that act as "intermediaries" in market transactions, i.e. those whose business model is based on data collection and processing in order to balance supply and demand for a specific product;
- granting the Bundeskartellamt broader access to data relevant to competition assessment as a necessary step in determining market participants' market power, with refusal to provide such data considered abuse of market power;
- strengthening the legal position of market participants by granting them the right to obtain a decision from the Bundeskartellamt on the legal admissibility of the intended transaction, bringing greater certainty to their business because they will no longer rely solely on their assessment of the legal admissibility of the intended transaction (Gleiss Lutz, 2021).

6. CONCLUSION

In this paper, the author provides an overview of the most common traditional types of cartels as forms of competition distortion, as well as a distinction between traditional and digital cartels, which are becoming increasingly common forms of competition distortion in the digital sphere. As one of the most sophisticated methods of distorting competition, digital cartels pose a difficult uncovering and sanctioning task to all national competition authorities. Consequently, close cooperation is more important than ever in the antitrust war on large technology companies that use sophisticated technological methods to

[4] Act against Restraints of Competition (Competition Act – GWB), *Federal Law Gazette* I, p. 2506, as last amended by Article 4 of the Act of 9 July 2021; https://www.gesetze-im-internet.de/englisch_gwb/englisch_gwb.html

maximize profit while violating the norms which modern technology is based on. One of the most significant barriers to effective cooperation between national antitrust authorities is the level of economic development and the development of the legal system. Germany, Europe's most economically developed country, has taken a significant step toward combating economic dominance abuse of the largest technology companies by enacting modern competition legislation. The German example suggests that other developed European countries should step up their legislative and institutional activity.

In the digital age, price algorithms, as a modern form of competition distortion, necessitate a faster transformation of national economies into the so-called Fourth Industrial Revolution economies in order to provide an effective response to the challenges of uncovering and sanctioning anti-competitive behavior.

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KARTELI U DIGITALNOJ ERI – IZAZOVI I PREPREKE

Karteli su sporazumi između učesnika na tržištu koji narušavaju konkurenciju. U radu je, pre svega, data definicija i podela kartelskih sporazuma, sa akcentom na najčešće vrste kartelskih sporazuma. Razrađen je algoritam određivanja cena, kao jedan od najčešćih vidova dogovaranja konkurenata u digitalnoj sferi. S obzirom na to da digitalno doba pruža neslućene mogućnosti za nezakonite sporazume i narušavanje konkurencije, autor je nastojao da objasni kako nacionalni antimonopolski organi različitih zemalja mogu uspostaviti efikasne mehanizme za borbu protiv kartela, kao i izazove i prepreke sa kojima se ovi organi suočavaju u borbi protiv kartela. Pored toga, autor je objasnio kako države sarađuju u borbi protiv digitalnih kartela. Autor se potom osvrnuo na izmene nemačkog Zakona protiv ograničenja konkurencije, čijim usvajanjem je Nemačka postala prva zemlja u Evropi koja je uvela radikalne mere u borbi protiv tehnoloških giganata, čija ekonomska moć često prevazilazi ekonomsku moć država.

Ključne reči: *konkurencija, karteli, digitalizacija, saradnja, izazovi, prepreke.*