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Algorithmic competition – Note by Spain

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More documents related to this discussion can be found at https://www.oecd.org/competition/algorithmic-competition.htm

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1. Introduction

1. Algorithms and artificial intelligence are widely used by companies to conduct business, often with welfare enhancing effects. However, they create several challenges for competition, and hence for competition authorities.

2. Algorithms and other information technology tools can be used for anticompetitive purposes. One example is algorithmic collusion enabled by artificial intelligence and software tools with a varied degree of sophistication. However, anticompetitive conduct can also appear in other forms, such as self-preferencing or discrimination (e.g. in rankings or matching algorithms). These risks appear more often in digital business models where algorithmic tools are used more frequently, but they can also take place in other sectors.

3. In order to tackle these challenges, the Spanish National Markets and Competition Commission (CNMC) has introduced digitisation as a priority in its Strategic Plan[1], leading to different initiatives in its annual Actions Plans[2]. On the one hand, an active analysis and monitoring of digital business models and sectors (including algorithms). On the other hand, the creation of an Economic Intelligence Unit (EIU) in order to ensure that enforcement makes an optimal use of new digital techniques and is capable of detecting different kinds of anticompetitive conduct (including when this conduct is facilitated by algorithms and artificial intelligence).

4. After this first introductory section, this contribution deals with CNMC's actions in these two fronts. Section 2 refers to CNMC's practical experience in this analysis and monitoring of anticompetitive conducts related to algorithms and other software tools, with a specific case on online real estate intermediation (S/0003/20 PROPTECH[3]). Section 3 describes the work carried out by the Economic Intelligence Unit (EIU) in order to increase detection of anticompetitive conduct through digital tools. Section 4 concludes.

2. The CNMC's practical experience concerning competition issues related to algorithms and software tools. The case S/0003/20 PROPTECH

5. The CNMC has introduced as a top priority the enforcement of competition law in digital business models and sectors, including the potential of algorithms and other information technologies to enable collusion and anticompetitive conduct.

6. One recent example of this investigative effort was a sanctioning procedure against several firms active in real estate online intermediation[4]. The CNMC fined (in December 2021) several companies with €1.25 million for entering into brokerage price-fixing and

[1] https://www.cnmc.es/sobre-la-cnmc/plan-estrategico

[2] https://www.cnmc.es/sobre-la-cnmc/plan-de-actuacion

[3] https://www.cnmc.es/novedad/sancionador-proptech-cnmc-intermediacion-inmobiliaria-cnmc-20211209

[4] Nothing can be commented on cases at a preliminary stage or at an investigative phase which may have analysed or may be analysing other cases of anticompetitive conduct (be it collusive or other type) where algorithms and other software tools might play a role.

information-sharing agreements in online real estate intermediation. This amounted to an infringement of article 101 of the Treaty on the Functioning of the European Union and of article 1 of the Spanish Competition Act, consisting in a cartel. The relevance of this case is the relevant role of software (despite its apparent simplicity) in facilitating collusion. This section summarizes the case and provides some takeaways and potential lessons learnt.

2.1. The origins of the case

7. The case started ex officio when the Directorate of Competition of the CNMC became aware (through press releases and information available on websites) of the possible existence of a conduct consisting in fee fixing and sensitive information exchange by real estate intermediaries, relying on specialized platforms and specific software tools.

8. Dawn raids were carried out at the end of 2019 in two real estate franchising companies and a software firm, a firm which applied for leniency afterwards.

2.2. Description of the case

9. The anticompetitive agreement was reached within a multiple listing service (MLS). MLSs (imported from the United States) consist in a database where members (real estate brokers and agencies) can share property listings and sales in that pool. When an MLS member finds a property (sale/rental) to list, it can upload the property in the system, so that other members have the chance to convert the sale/rental. The agreed fee (for the overall brokerage service offered) is finally distributed between the member which found the property and the one which finally made the sale/rental.

10. The Decision clarifies that the MLS as such was not an issue[5]. The infringement was derived from the specific rules and regulations approved by the developers of the MLS (two real estate franchisers). These rules were binding for its member agencies and brokers (franchisees), which had to comply with

- Applying a minimum commission of 4% on sales/rentals.
- Sharing the information on their fees with all members.

11. In order to make sure that these rules were followed, there were different mechanisms in place:

- The MLS and the CRM (customer relationship management) software were designed in a such a way that a property could only be shared in the MLS if the member shared the information on the fee (when uploading the property) and the actual fee was above the established minimum of 4%. If the fee was below the agreed minimum, the property would not be uploaded in the MLS pool and the system would send a pop-up warning specifying the reason (the fact that the broker was not respecting the minimum fee).
- Deviations from the rules were monitored and could be punished with monetary fines and the ultimate exclusion from the MLS.

12. Therefore, the membership in the MLS limited the incentives and the ability of real estate agencies to compete and set commissions independently.

[5] Actually it is a logic and rationale response to turn the market wider and more efficient. See page 82 of the Decision https://www.cnmc.es/sites/default/files/3831141_0.pdf

2.3. The Decision

13. In December 2021, the CNMC's Board declared the existence of a cartel and sanctioned several companies with €1.25 million[6] for entering into brokerage price-fixing and information-sharing agreements in online real estate intermediation. The companies fined were the two real estate franchisers, which had launched the system and drafted and enforced the rules, and several IT companies, which were running the MLS and which had adapted the CRM software in order to make sure that properties were uploaded only when complying with the rules.

2.4. Some takeaways and lessons learnt

14. The case illustrates a relatively basic form of collusion in the digital era. As such, it is a simple and traditional form of collusion: minimum fees and information sharing, enforced by some binding rules and the monitoring and punishment of deviations. But it is facilitated by software tools.

15. In this regard, this would be the "The Computer as Messenger", the simplest form of algorithmic collusion according to Ezrachi and Stucke[7]. Therefore, the CNMC's experience with this case cannot provide conclusive lessons on other challenges associated to more complex cases (where the anticompetitive nature is generated by self-learning artificial intelligence).

16. Nonetheless, the CNMC's case does provide interesting lessons on how algorithms and other software tools can facilitate these forms of traditional collusion. In this case, the collusive agreement took place in a very decentralized environment (with thousands of real estate agents or franchisees) where the economic theory would predict the collusive agreement not to thrive. In this case, software tools were key to enable the agreement and to enforce it through monitoring and punishment mechanisms. This implies that the risks for collusion extend to different activities (be them digital or traditional), including decentralized sectors.

3. Detection and analysis of anticompetitive conduct in the Economic Intelligence Unit

17. The CNMC's priorities, set in its Strategic and Action Plans, include enhancing detection capabilities and the analysis of anticompetitive conducts, among other things by using new tools and developments, in some cases implying artificial intelligence to gain a better understanding of their potential use in anticompetitive conduct.

18. This is one of the objectives of the Economic Intelligence Unit (EIU) of the CNMC, created in 2018.[8] Given its tasks, the team of the EIU consists of a multidisciplinary group

[6] The Decision opens as well the possibility for the public administration to consider the debarment of these companies (except for the leniency applicant) from public procurement.

[7] See https://www.illinoislawreview.org/wp-content/uploads/2017/10/Ezrachi-Stucke.pdf

[8] The EIU has other objectives. In general, the EIU supports the Competition Directorate´s decision-making in all types of cases. One specific task is the improvement of dawn raids' effectiveness, for example, by obtaining information with OSINT (Open-Source Intelligence) techniques. The EIU has several anonymous channels for citizen collaboration such as the whistle-blower programme. See the CNMC's contribution to the competition policy roundtable on Data Screening Tools for Competition Investigations in December 2022 to learn more about the EIU.

with economic, legal, statistical, mathematical, IT and data protection profiles, all of them with extensive experience in competition matters.

19. The analysis carried out by the EIU is used both for purely *ex-officio* detection and for refining the analysis in other cases: enhancing and reinforcing evidence, sampling and testing of allegations, dawn-raid planification, etc.

20. Other investigative approach at the EIU, which takes advantage of some of the techniques mentioned above, is the use of *Open-Source Intelligence* (OSINT) and *Human Intelligence* (HUMINT) tools in order to provide an accurate identification and location of organizations and persons of interest, the relationships among them, and their degree of control of the companies and organizations which are under close scrutiny.

21. Collecting the right data allows to use specific techniques and analyses, such as machine learning, graph analysis and other advanced techniques related to data processing, specially referred to public procurement[9].

22. Such advanced statistical indicators and techniques, along with the incipient but promising artificial intelligence tools used by the EIU, can be very useful in all sectors, but they are already proving especially useful in *bid rigging* cases. The CNMC has created specific algorithms for data extraction and cleaning, regarding all participating bids and bidders, and it has hence created a complete digital database of public procurement in Spain. This allows to perform instant, advanced searches (on any type of document) to identify winning and losing bids and bidders, and therefore to apply digital tools and intelligence on those data in order to ascertain patterns and predict flows.

23. This work by the EIU is key to improve detection and investigation, in cases where algorithms may play a significant role and in other cases. This should increase *ex-officio* detection of cartels and other anticompetitive conduct. In this regard, it is worth mentioning that between 2018 and 2022 (since the creation of the EIU) 70% of CNMC's cartel decisions have not been triggered by a leniency application. This increased rate of *ex-officio* cartel investigations since 2018 is partly due to the special scrutiny of bid-rigging cases (it is also important to be noted that 70% of CNMC's cartel cases concern bid-rigging).

4. Main conclusions

24. The enforcement of competition law in digital markets is complex, especially as much as algorithms and artificial intelligence are concerned. Competition policy tools are flexible enough to adapt to the disruption driven by digitization, but some challenges remain.

25. The CNMC has tried to adapt and refine its enforcement tools, for instance, through the creation of an Economic Intelligence Unit. The CNMC has also given strategic priority to monitoring anticompetitive conduct driven by algorithms and digital business models. Even if much has been debated about algorithmic collusion, the threats to competition also include unilateral conducts (e.g. self-preferencing and discrimination in rankings or matching tools). In this regard, regulatory approaches like the Digital Markets Act in the

https://www.oecd.org/daf/competition/data-screening-tools-for-competition-investigations.htm

[9] See the CNMC's contribution to the competition policy roundtable on Data Screening Tools for Competition Investigations in December 2022 to learn more about the data use and screens by the EIU. https://www.oecd.org/daf/competition/data-screening-tools-for-competition-investigations.htm

European Union may be warranted when the issues may be more systemic and competition policies may not be agile enough.