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A confusing relationship between privacy and competition law — a way forward for EU competition law and algorithms pricing

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Abstract. The unprecedented magnitude of data collection could raise challenges for both society and legislation, as it has emerged that the personal data is seen as a tradable commodity, placing entities in a position where data helps them to achieve a stronger position in the market. Big Data in simplest terms constitutes large collections of information about end-users. The vast scope of data collected includes geo-location, search queries and/or online purchases and browsing history. Digital platforms collect such data directly from their users, or via cookies.

Algorithms in itself might be seen as a worrying trend, due to its dynamic, and widely undiscovered nature. Recently, the German Competition Authority, in its proceeding against Facebook, indicated that collection of data on an unprecedented scale could result in data protection being of a weaker force to sufficiently address the apparent perils, and therefore, the use of competition law could be adequate to assess the entrepreneurial activity of a digital company. Within the scope of the EU Commission, the Google Shopping case demonstrated the carefulness in decision-making and relied on the already established competition law rules to determine the effect of the Google's conduct on the relevant market. A more nuanced approach has been introduced by the BKA, in their proceeding against Facebook, indicating that competition law and data protection could be interchareably applied to the competition assessment.

Personalised pricing, unquestionably, harms final consumers. Within the remits of Article 102 of the TFEU, it is identifiable that there are two types of abuses prohibited: exploitative and exclusionary. Yet, the wording of Article 102 TFEU showed that there are no direct mention as to whether only the provision harming industrial consumers or final consumers should be sanctioned. By considering the algorithmic price spectrum on competition law, the cases such as the BKA's Facebook case, and any subsequent cases, might act as an example that privacy breaches could also be an important component of algorithmic pricing, which could be characterized by an actual price. Hence, it might be an indication that potentially privacy concerns might be seen as indirectly influencing

competition law assessment. Also, the algorithmic pricing could be seen as being impacting individuals' lives and their decision-making processes by interfering with their behavioral autonomy. Yet, there are also pro-competitive aspects identifiable too.

This paper looks at the algorithms pricing and the privacy concerns; a proliferation of the data-fueled companies leads to several issues under EU competition law and how to approach them. This paper considers a relationship between algorithms pricing, data protection concerns and competition law. This paper is going to suggest that the algorithm pricing does not require new legislative changes under the EU competition law regime. However, they require careful consideration since it is difficult to detect them. Therefore, it is aimed to propose that privacy concerns appear to hold a multidimensional approach to competition legal regime and require careful considerations in competition law assessment, yet they could only indirectly influence the competition legal order, and might not be seen as proxy in which competition law could be amended. To sufficiently map their complex relationship, it is necessary to map commonalities and, the current, misalignments. Therefore, this research presents a legal overview of the EU Commission and the EU Member State approach to the relationship of data protection and competition law debate. Lastly, yet, the author does not attempt to present features which could trigger the intervention but provides a discussion of a potential roadmap of this complex relationship between competition law, privacy concerns and algorithms pricing, which encompasses the competition law enforcement targeting discriminatory pricing.

Keywords: EU Competition Law, Technology Jurisprudence, Algorithmic Pricing.

1 Introduction

The unprecedented magnitude of data collection could raise challenges for both society and legislation, as it has emerged that the personal data is seen as a tradable commodity (World Economic Forum 2011), placing entities in a position where data helps them to achieve a stronger position in the market. Big Data in simplest terms constitutes large collections of information about end-users (World Economic Forum 2011, p. 371). The vast scope of data collected includes geo-location, search queries and/or online purchases and browsing history. Digital platforms collect such data directly from their users, or via cookies (Miller 2014, p. 43).

This paper looks at the algorithms pricing and the privacy concerns; a proliferation of the data-fuelled companies lead to several issues under EU competition law and how to approach them. This paper considers a relationship between algorithms pricing, data protection concerns and competition law. This paper is going to suggest that the

algorithm pricing does not require new legislative changes under the EU competition law regime. However, they require careful consideration since it is difficult to detect them. Therefore, it is aimed to propose that privacy concerns appear to hold a multi-dimensional approach to competition legal regime and require careful considerations in competition law assessment, yet they could only indirectly influence the competition legal order, and might not be seen as proxy in which competition law could be amended. To sufficiently map their complex relationship, it is necessary to map commonalities and, the current, misalignments. Therefore, this research presents a legal overview of the EU Commission and the EU Member State approach to the relationship of data protection and competition law debate. Lastly, yet, the author does not attempt to present features which could trigger the intervention but provides a discussion of a potential roadmap of this complex relationship between competition law, privacy concerns and algorithms pricing, which encompasses the competition law enforcement targeting discriminatory pricing.

This article engages in a wider normative analysis and exploits the effect of personalised pricing on competition and consumers. After presenting some theoretical remarks, i.e. a discussion about the EU competition and data protection legal order and their scope and applicability on algorithms pricing, the article moves to consider the overall effect of algorithms, providing a discussion on the definition of algorithms. Then, the article moves to consider the effect of algorithms pricing on the competition processes, considering the algorithm and big data acquisition as an abuse of dominant position, and consumer welfare, considering the exploitative extent of personalised pricing by dominant online undertakings and their impact on the end consumer, a so-called secondary line of injury.

2 EU Competition Law and Data Protection Law

Before focusing on the issue of algorithms, and its impact on the relationship, a quick overview of the EU competition law and data protection regimes is provided.

2.1 EU Competition Law and algorithms pricing

EU competition law aims at pursuing several different goals which include, amongst others, protection of market structures, economic freedom, efficiency and consumer welfare (Guidelines on the Commission's Enforcement 2009). The rules are codified in articles 101-106 of the Treaty on Functioning of European Union (TFEU), and aim at prevention or distortion of competition law, as well as prohibit abuse of dominant position. According to the EU Guidelines, the EU competition legal order applies to any 'economic activity' which could affect trade amongst the Member States

(Guidelines on the effect on trade concept contained in Articles 81 and 82 of the Treaty 2004).

The use of algorithms is said to increase the number of known anticompetitive occurring and display new forms of anticompetitive conducts (Colino 2013, p. 5). Undertakings in particular markets could seek to collude with one another, with an objective for achieving higher profits than they could attain at non-cooperative market equilibrium (OECD 2012, p. 17). The use of pricing algorithms within the scope of concerted practices or agreement between competition with the idea of restricting competition would be prohibited by Article 101 TFEU. Yet, more evidence is needed to assess the AI's goal. The use of algorithms might generate transparent market which enables to improve pricing models, making prices more dynamic and differentiated.

The judgement in the Bayer case indicated that agreements within the scope of Article 101 TFEU would require the existence of the consensus between firms with antitrust intention (Bayer v Commission 2000, para 69; Dyestuffs 1972). However, it is recognised that Article 101 of TFEU does not outlaw undertakings' parallel behaviour that might result in intelligent adaptations to market conditions (see: Suiker Unie and others v Commission 2017). Petit (2017) claimed that, although tacit collusion appears easier to fulfil when oligopolists use homogenous algorithms if oligopolists show asymmetry in investments, market shares or costs, then tacit collusion would be harder to achieve (p. 361). Thus, the most customer-designed products are offered with the customer-specific prices, the less achievable tacit collusion becomes (Petit 2017, p. 362).

The emphasis in this article is placed on Article 102 TFEU, which prohibits the abuse of a dominant position. In this respect, it is worth noting that the mere market dominance is not seen as infringement in itself. With a proliferation of data-fuelled platforms, Article 102 TFEU can be applied to the digital economy, since the privacy infringements, i.e. unfair data acquisition on an unprecedented scale, could allow for the abuse of dominance (Facebook, case summary, 2019). Furthermore, Article 102 TFEU could be apply to the actions which are anticompetitive of data-fuelled digital platforms. Article 102 TFUE defines abuse as taking forms of exploitative abuse and exclusionary abuse (Commission guidance 2009). A deeper discussion regarding the exclusionary and exploitative abuses is provided in further discussion about the algorithms and its impact on competition processes and consumer welfare.

2.2 Data protection and algorithms

Within the remits of the EU legal order, the data protection offers extensive protection. Article 16 TFEU serves as a basis for the EU data protection. Further

protection of personal data is offered by the Charter of Fundamental Rights of European Union (2010), where Article 8 recognises personal data as a proactive right that reaches being individuals 'protection against the intervention of a state. As per Article 8 of the Charter, personal information of individuals could be proceeded by anyone, including the State. Such a wide right is subject to Article 8(2) and (3), requiring any information proceeding to be fair, transparent and lawful for individuals. In addition, further recognition of data protection is enabled in the General Data Protection Regulation (GDPR) which governs how companies could process personal data. Under the GDPR, the processing involves any activation which could be pursued with personal data (Article 4(2) GDPR). The 'personal data 'is defined as any information, acquired by a company, which relates to natural persons, and allows for their potential identification (including their location, or IP) (Article 4(1) GDPR). The GDPR also introduced clarity of its regime by defying key issues, such as the definition of 'data subject ' which encompasses any person of whom data is collected (Article 4(1)); and 'data controller 'which refers to any person (either natural or legal) that proceed the acquired data (Article 4(7)). Importantly, the key feature of the GDPR's regime is a consent, which has to be unambiguous, specific, informed and freely given. The GDPR strengthened the protection of personal data and, simultaneously the privacy of users.

As per the case of *Breyer*, the concept of personal data appears to have a broad scope of applicability (*Patrick Breyer v Bundesrepublik Deutschland* 2016, paras. 44-49), with a many academics arguing that personal data protection becomes the 'law of everything' (Purtova 2018, p. 41) Hence, arguably, any use of personal data, even by an algorithms, falls within the scope of the GDPR, since Article 4(2) GDPR broadly defined processing of personal data as "any operation or set of operations which is performed on personal data or on sets of personal data, whether or not by automated means, such as collection, recording, organisation, structuring, storage, adaptation or alteration or otherwise making available, alignment or combination, restriction, erasure or destruction". Hence, such a broad definition would encounter any forms of algorithms pricing; arguably, prohibition of personal pricing algorithms might fall within the data protection regime although it is not explicitly prohibited by the GDPR per se. Generally, there are no *ex ante* choice available to the individuals, under the EU data protection law, as to whether they want their personal data to be processed. Although, consent is required, individuals are still unable to fully consent to the real purpose of data processions. Arguably, since the GDPR included the principles of fairness and transparency, which are necessary for algorithms, and its potential discriminatory nature.

3 Algorithms and its impact on Competition Law and Consumer Welfare

3.1 Defying algorithms pricing

Algorithm pricing might be seen as a worrying trend of the future. Companies try to conceal their use of algorithms, to hinter claims that they are not responsible for their pricing decisions. Amongst different practices of price personalization, steering, known as search discrimination, appears to be the most common form of price discrimination (Mikians et. al. 2012, p. 1). For example, Mikians et al (2012), in their empirical study concluded, based on a several proxy services across Europe, USA and Asia, that several marketplaces 'steered' users into variety of product and their search was identical and took place in the same time and same website (p. 1). Typically, a steered-into product was either aimed to more budget conscious or affluent consumers. Mikians et. al. (2012) argued that often the discriminatory factors led by algorithms were based on the amount of personal information, known about the users, including their search history, and/or purchasing history, or the geographical location (p. 2).

Mickians et al. (2012) provided an important dimension to the debate on the use of algorithms. Yet, their empirical study was also prone to certain limits, as differentiation between Windows and Mac users (Hannak 2014). Interestingly, algorithms, been extremely hard to detect, pose certain research limits. For example, in Mikians et. al's research (2012), the study was based on the 'streering' discrimination and disregarded any other potential types of price discriminations such as fake special offers, re-offers, drip pricing, or decoys. Yet, this also demonstrates an interesting caveat. The phenomenon of internet and its potential influence on business models demonstrates the methodological issues on the scope of the researches. It becomes practically impossible to cover all of the potential anticompetitive elements due to their dynamic and overarching nature.

3.2 Personalised pricing and its effect on competition law

With an increase of data-fuelled companies offering services and products at low or no costs at all, many argue that any close interaction between competition law and data protection law might result in establishing an equilibrium in the competitive digital economy assessment. Nevertheless, any of such opponents would have to stay vigilant to not overstretch the scope of the EU Competition law applicability. Recently, the German Competition Authority (BKA), in its proceeding against Facebook, indicated that collection of data on an unprecedented scale could result in data protection being of a weaker force to sufficiently address the apparent perils, and therefore, the use of competition law could be adequate to assess the entrepreneurial activity of a

digital company. This section considers the impact of the personalised pricing on competition legal order. It is beyond the scope of this research to consider all potential competitive harms imposed; the emphasis would be given to the abuse of a dominant position.

Personalised pricing as an abuse of dominant position.

To further emphasis the concept of algorithmic pricing and its impact on competition law, two examples of the EU competition legal sphere would be presented.

Google Shopping case.

The Google Shopping case serves as an example where the EU Commission had to consider whether Google abused its dominant position. The assessment of the abuse of dominant position was said to take place on the search engine market and established that Google acted in an anticompetitive manner declassing any rival comparison shopping services in search result while placing its shopping adverts first (*Google Shopping 2017*). The conduct was attributed to the criterial in the algorithms of Google search, without Google being subject to its algorithm in itself; this increased the traffic gain for Google and impose losses for Google's competitors. The case, in itself, resulted in a number of important questions asked, namely: how to categorise Google's abuse, or whether the EU Commission should have assumed a presence of a two-sided market, as well as the correct implementation of remedies (Nazzini 2015, pp. 307-310).

The EU Commission faced a rather peculiar case, having to analyse the evidence of approximately 5.2 terabytes of Google search data. Nevertheless, the publicity available information indicates that the EU Commission has not enjoyed a special insight into Google's search algorithms functioning (Picht, Loderer 2018, p. 22). In order to grasp an insight to Google's algorithms, called 'Panda' which aims at demoting competition in comparison shopping services, the EU Commission needed to base its observations on documents as well as different blogposts (Picht, Loderer 2018, p. 22). In addition, the EU Commission's investigation was based on an assessment of the Panda's use -- the visibility of the competing comprising websites was higher before the algorithms was launched, and subsequently dropped without any recovery (Google Search (Shopping) 2017, para. 361). To affirm the alleged Google's abuse of dominant position by excluding itself from the scope of the algorithm and diminish the traffic for the other competitors, the EU Commission established through replies to their request for information (Google Search (Shopping) 2017, para. 380-383).

In the respect of the remedies ordered by the EU Commission proposed a remedy of equal treatment, which was aimed to not interfere with Google's algorithm (EU Commission 2014) Hence, the EU Commission again applied a more traditional approach and considered the digital economy conduct from the already established

competition rules by looking at the market results of Google's anticompetitive conduct rather than considering the impact of algorithms.

Facebook German Case.

The BKA began its investigation against Facebook due to apparent Facebook's abuse of dominance in the social media market. During the investigation, the BKA analysed closely Facebook's T&Cs and concluded that some provisions were, in fact, unfair to its users. Facebook's position allowed the platform to acquire and analyse the data of Facebook, WhatsApp, Instagram, Oculus and Masquerade users as well as the data coming from any websites/apps that use 'Facebook Business Tools'. This case could serve as an interesting example of the Competition Authorities trying to provide elements of certainty to the debate on the data protection influence on competition law.

The BKA recognised Facebook as a multi-sided platform, and narrowly defined the relevant market as the social network market in Germany. On the further assessment, the BKA distinguished two sides of the market — a market for social media and a market for the private end-users in Germany (*Facebook*, case summary, 2019, p. 4). The non-price feature of Facebook was not considered as being problematic from the German legal perspective as section 18(2a) German Competition Act indicated that no cost of the service/product would not invalidate the market assumption (*Facebook*, case summary, 2019, p. 4). On the assessment, the revenant markets amounted to around 95% of daily social network users (*Facebook*, case summary, 2019, p. 4). Therefore, this, unquestionably, evidenced Facebook's dominant position on the market. Yet, it shall be emphasised that the mere dominance on a relevant market is not itself prohibited; dominant undertakings bears a special obligation to not impose discriminatory terms of service.

Interestingly, the competition on the social market network reminds low. For digital services, advertising-financed profits are key elements to innovate. Hence, the personal data of private users remains a key aspect of their revenues. Facebook's position on the market was exceptionally high, as concluded by the BKA, which based its conclusions on the elements such as indirect network effect or access to data.

On the assessment, the BKA considered a number of elements which could have further affirmed Facebook's dominant position in the market. Unquestionably, there has been a behavioural element of users identified, which made it difficult for users to suddenly change the platform into another: users were more likely to stay locked-into a platform due to the presence of their peers or family on the platform. Therefore, this could have been indicative of other platforms experiencing a decrease in their users. In addition, Facebook demonstrated a strong network effect, since the platform was capable of offering targeted advertising, based on Facebook's business model. In response, Facebook was in a position to gather a large quantity of users 'data, and,

subsequently could link personal profiles between Facebook-owned platforms and third-parties using Facebook Business Tools. In this respect, Facebook was capable of acquiring data from the so-called travelling website; this initiated a possibility of personalised pricing.

Considering the Facebook case further, the BKA concluded that Facebook's conduct as a manifestation of market power (*Facebook* case summary 2019, p.6); the BKA's investigation was concerned with to anticompetitive issues, namely: the consent protocol of Facebook's users, and the accumulation of Facebook users' data — both deemed unfair under Article 102(a) TFEU. Such an approach could be divided as exploitative and exclusionary theories of harm spectrums. Before turning to discuss briefly the theories of harms under the wider EU competition legal regime, it is necessary to stress that the Facebook case based its decision on German law

While assessing the exploitative theories of harm, the BKA found that Facebook's T&Cs allowed for a wide data acquisition from a variety of sources, which included the sole Facebook platform data, as well as any device-related data from sources outside Facebook, and subsequently merged the gathered data together (*Facebook* case summary 2019, p.7). Unquestionably, an act of exploitative business terms amounted to Facebook's abuse of dominant position. Under the EU competition legal order, exploitative abuses are prohibited under Article 102 TFEU, and the caselaw interpreted them as including prohibition of predatory pricing, unfair pricing, or unfair trading conditions (*United Brands* 1978, para 248; *Ministère public v. Jean-Louis Tournier* 1989, para 34). Hence, it remains accepted that unfair trading terms or price could be unfair as to its effect on competitors. In addition, as per *United Brands* (1978) case, discriminatory trading terms or provide could also form abuse of dominance due to its negative effect on consumers (p. 248).

The debate as to whether the EU Commission practice could support that privacy's policy of a social network could be seen as being abusive under Article 102(a) TFEU is very vivid and topical. Yet, for many such a connection could be established, based on the absence of connection between the contract purpose and its disproportionate nature (Nazzini 2019). As per *BRT v SABAM* (1974) case, the assessment of exploitative trading condition aims at assessing of all relevant interests, when considering the 'fairness' of a contract clause, as necessary precaution to achieve a balanced and proportionate assessment. Furthermore, the Commission, in the case of *Tetra Pak II* (1996), advanced the argument on the proportionally test application in the context of exploitative abuses, indicating that unfair clauses forced "additional obligations which have no connection with the purpose of the contract and which deprive the purchaser of certain aspects of his property rights" (para. 107).

In the Facebook proceeding, the BKA applied a broad proportionality test, which considered all the relevant interests, based its assessment on the close relationship between data protection law and competition law. In the BKA's consideration, the

GDPR amounted to a constitutional right offered at a uniform level and therefore was necessary for assessment under competition law. In this respect, the GDPR infringement could be seen as a basis for the exploitative abuse. Facebook's actions of extracting the users 'content are clearly non-achievable by a non-dominant undertaking; on the assessment whether the content has been freely given, under Article 7(4) GDPR, the contract performance is also considered. Therefore, the consent to process data is of high importance, with the contract performance being conditional regardless of the market position of a data controller. Yet, any approach to the GDPR of a non-dominant undertaking would not initiate a competitive assessment.

The BKA was very cautious in the GDPR consideration while assessing the competition law infringement. Generally, the EU competition law disregards any application of the privacy-related concerns to the competition law assessment, since it is beyond the scope of EU competition law to consider the data related infringements. However, the BKA, in its assessment, relied on the German Federal Court of Justice approach, which directed that competition rules might be used to justify the protection of constitutional rights since a dominant market position prescribed an unlawful privilege to terminate the autonomy of contracts (*Facebook* case summary 2019, p.7).

Although the infringement of the GDPR might not amount to competitive harm in itself, the BKA's argumentation took an accumulative approach that the GDPR infringement was relevant from the perspective of competition law, as the Facebook's market position's abuse was capable of incorporating elements of the GDPR infringement. Nevertheless, the precise meaning of the BKA's approach could not have a solid basis under the EU competition legal order.

In addition to the exploitative abuses, Facebook's conduct also amounted to the exclusionary abuse. The BKA indicated that Facebook's access to a great quantity of data increased market entry barriers (*Facebook* case summary 2019, p.11). The exclusionary basis is also prohibited under Article 102 TFEU. In light of the Facebook case, the BKA has not explicitly referred to the exclusionary abuse. However, a brief discussion will be provided. Unquestionably, Facebook's conduct could amount to exclusionary abuses, since the conduct in question might be seen as being of 'the detriment of consumers, of customers hindering the maintenance of the degree of competition existing in the market or the growth of that competition".

Generally, to safeguard an undisturbed flow of competition, an undertaking would be required to obtain the voluntary consent before acquiring the users' data. Facebook, as a dominant undertaking, is under a special obligation to provide their users with a fair T&Cs, as any contradictory action might have a detrimental effect on competition and consumers. In addition, any unlawful conduct might restrict the effective competition process and result in foreclosure of competitors. By that means, Facebook's conduct, infringing the GDPR, could arguably attach competitive wedge, as any

detrimental to privacy policy could bear a negative effect on the innovation, prices and quality.

Nevertheless, the GDPR breach could potentially indicate some anticompetitive impact. Yet, any further assessment discussion the relationship between competition law and the GDPR requires a careful case-by-case analysis; these are two separate areas of law, which aims at remediating different concepts at core.

Analysis of the case law.

The examples provided could only further emphasise that the debate about the anticompetitive aspects of the digital economy remains unresolved, with several academics, practitioners and enforcers trying to ensure a smooth application of competition law, ensuring a healthy competition within the internal market.

Personalised pricing, unquestionably, harms final consumers. Within the remits of Article 102 of the TFEU, it is identifiable that there are two types of abuses prohibited: exploitative and exclusionary. Yet, the wording of Article 102 TFEU showed that there is no direct mention as to whether only the provision harming industrial consumers or final consumers should be sanctioned.

The debate on the actual remits of Article 102 TFEU has been widely covered. Akman (2009), in her research on the sanctions available under Article 102 TFEU, concluded that, under *travaux préparatoires* of the Rome Treaty, Article 102 TFEU primarily aimed at exploitative conducts harming final consumers (Akman 2009, pp. 267-303). Yet, the high burden of proof and potential overlap with different sector-regulation made the EU Commission seldom investigating any exploitative abuses.

Considering the existing case law, the Commission is likely to consider the exclusionary abuses, where a dominant harmed competitors and indirectly harmed consumers. For example, *Deutsche Post*, the Commission did not directly discuss the issue of final consumer harm, when considering the distribution of mails in Germany (*BdKEP. Restrictions on mail preparation*, 2004). Yet, the EU Court of Justice clarified their position in the case of *MEO* (2018, para 80) providing that price discrimination based explorative forms of abuse are rare. In the line of this argument, it could be perceived that indeed firms, which are vertically integrated, have no reason to discriminate their consumers, as they act as their competition in the downstream market. Hence, it was indirectly suggested that Article 102 TFEU could sanction only discriminatory acts which exclude competitors or industrial consumers (primary line of injury) (*MEO* 2018, para 80) Yet, the case law has not excluded personalised pricing as a form of exploitative abuse.

This brings the debate into consideration as to what extent Article 102 TFEU could sanction directly harming to final consumers conducts. According to Akman (2007), Article 102(c) TFEU emphasises on the expression of 'trading partners', which meaning could also include consumers (p. 498). Therefore, potentially consumers could act as a competitor. Therefore, the administrative decision of the EU Courts and NCAs could extend its scope of application of abuses to abuses which directly harm final consumers. This shift would not require any amendment of the Treaty.

Considering the aspects of 'competitive disadvantage', *British Airways* (2007) (referring to *MEO*) ruled that it is not required to establish the competitive disadvantage suffered by customers (see, *MEO* 2018, para 27). Yet, considering the case of *Intel* (2017), in the line of more effect oriented approach, the Court held that 'all the relevant' circumstances should be taken into account when assessing competitive disadvantage (see, *MEO* 2018, para 28). A number of factors should be taken into account considering Intel analogy, which are: market position, negotiation power of the customers, tariffs (conditions, arrangements, and duration and its amount), and the existence of strategy.

The algorithmic markets poses another competitive issue — they are likely to result in a collusion amongst competitors. Types of collusion, both explicit as well as tacit, are undesirable from economic perspective, as for example a tacit collision might result in lower output, higher prices or deadweight losses, which results in welfare reduction (Picht, Freund 2018, p. 6). In the EU competition law, only explicit collision is probated by law. The tacit collision is tolerated as its strategy might allow to market players to exhibit competitive behaviour, which allows to adapt their strategy to different market conditions or prices (*A. Ahlström Osakeyhtiö and others v Commission* 1993). Although, it is beyond the scope of this paper to discuss in depth the tacit collusion concerns, it is worth mentioning four ways in which tacit collusion might be facilitated, mentioned by Picht and Freund (2018); they are: (1) an increasing of frequency and decreasing of the latency of a market participants' transactions; (2) the super competitive equilibrium could weaken tacit collusion; (3) an increased ability to acquire and process a large quantity of data could allow competitors to better understand each other's strategies; (4) human biases are not succumbing algorithms (p. 7).

The extent of predicability and control of algorithms, and their design and implementation in tailoring appropriate conduct, poses a difficult question to the legal sanctions, and aspects of trailing important conduct requirements. From a perspective of fairness and consumer welfare protection, the phenomenon of price discrimination could be regarded as an unfair practice, due to its ambiguity. Yet, the expression of an 'unfair' practice could be subjective and might not be easily accepted by the judiciary

approach, due to its wide scope of application. In the terms of pricing, the EU Court of Justice conduced that competition might only be restricted if "by the way in which they ac[t], the undertakings [...] eliminat[e] with respect to prices some of the preconditions for competition on the market which [stand] in the way of the achievement of parallel uniformity of conduct" (*Dyestuffs* 1872, para 103). Therefore, it will be necessary to show that an undertaking in question participated in decision making which resulted in a coordinated market behaviour (see *Eturas* 2016, para 45).

Market, which favours coordinated effects, are generally more transparent. Yet, similarly, such markets might leads to companies violating Article 102 TFEU resulting in unfairly increased prices, caused by engagement in unilateral conducts. Yet, the complexity of algorithms pricing poses a certain administrative and judicature restraints: detecting and pursing any competition violation, involving algorithms pricing is a nebulous task. Often, the violation is detected by an existence of a collusive market; competition agencies are later requited to compare different geographical or product market features, or any other similar features, to detect patterns of potential anomalies, which would allow to detect an existence of an abuse.

Nevertheless, the algorithms pricing and competition law could also be stretched to encompass the topic of privacy within its vivid debate. Especially, in the Facebook case, it appeared to be indispensable to inspect the conduct of dominant undertakings under competition law also in the terms of the data protection implications, as the essence of the online business 'conduct is relevant from the competition law perspective. According to the German authority held that the data protection implications must be also considered when assessing whether data protection terms are also appropriate under competition legal framework, based on a close examination of the relationship between competition law and the data protection law, the implications; the violation of the data protection requirements could be seen as a mean to determine a manifestation of Facebook's market power (*Facebook* case summary 2019). This was also represented as a consensus reached between the BKA and the data protection authorities.

Both data protection and competition legal order seek the advancement of market integration, and both share a concern for the welfare of individuals, with consumers benefiting from the collection of their data in a wide array of free services, product or contents. Vestager (2016) claimed that the acquisition of big data does not immediately result in anticompetitive conducts. However, a handful of technology undertakings exercise control over a large quantity of personal data and its processing, with a focus on personal practices. Data collection on an unprecedented scale put the privacy of the end-users into danger. As a result, the changing economic landscape brings uncertainty to the nature of the competition pressures, with an emphasis being given on the

normative scope of competition enforcement — mainly as to whether the EU competition law could be viewed as a societal norm also advancing the wealth.

Yet, one might encounter a paradoxical relationship, as the EU competition law aims at both achieving a well functioning, competitive market as well as preventing consumer harm (Post Denmark I 2012, para 20). This is, thus, unclear to determine what the potential stance for competition law could be. It is difficult to engage in an analysis of the long-term interest of consumer for dynamic efficiencies. Furthermore, privacy and data protection are recognised in the European Charter of Fundamental Rights (2010) as a fundamental human right, and data protection law — GDPR (2016). Consideration of privacy-oriented goals could indicate a shift from the consideration of price parameters to consider also the external goals. According to the EU data protection, the growing economic significance of data requires the adoption of a new concept of consumer harm, which embraces an evolutionary interpretation of the current competition enforcement, especially the abuse of market dominance concept.

Nevertheless, by incorporating the principles of other regimes into competition law, the competition analysis might become inundated with different methodologies, potentially displaying difficulties in establishing anticompetitive behaviour. Consequently, although reflecting on Dworkinian principle that law is gapless, and the erasing boundaries between competition law and data protection law, each of these areas (including competition law) has its own value.

Although *Asnef-Equafax* (2006) noted that any issues relating to the personal data are not matters for competition legal framework and should be resolved based on the relevant provisions of data protection law, the aspect relation to data protection is not a new concept in the competition framework, as the Commission's decisions on mergers and antitrust adopted aspects of data-relating issues (*Telefonica UK/Vodafone UK/Everything Everywhere/J VH* 2012). Furthermore, with the development of digitalisation, especially of the IoT, issues relating to Big Data would remain the key priority for the Commission. In *Facebook/WhatsApp* (2014), the EU Commission claimed that privacy polities establish a non-price parameter of competition: a degradation of private policies could affect aspects of product quality, or even amount to the product price increase (*Microsoft/LinkedIn* 2017). Potentially, by considering the algorithmic price spectrum on competition law, the cases such as the BKA's Facebook case, and any subsequent cases, might act as an example that privacy breaches could also be an important component of algorithmic pricing, which could be characterised by an actual price. Hence, it might be an indication that potentially privacy concerns might be seen as indirectly influencing competition law assessment.

In a healthy functioning competitive market, products are offered at lower prices, and better quality of product/services is likely to attract consumers, who can make informed choices. Such a process is further subordinated by better competition and

innovation in a 'virtuous circle'. The digital platforms, due to the proliferation of the data-fueled platforms and services, are becoming monopolies, yet it could be preliminary wrong to see indicted that all digital platforms are demonstrating anticompetitive features. Hence, regulators might be required to go beyond the scope of the ordinary defined competition law rules and consider a bigger picture. The digital markets are therefore more dynamic than static and require careful considerations, due to the abstract nature of the data-fuelled markets. Yet, this could only have an impact on competition law when privacy was a key parameter of competition and was not a case for consumer communication apps where price, user base, popularity or reliability were important factors.

Importantly, the competitive harm of undertaking conduct cannot be seen as a result of a loss of control of the users, as the collection and processing of data was based upon the user's consent on the abusive terms and conditions. Furthermore, an infringement of the data protection law cannot per se amount to an abuse of dominant position, as it is still necessary to establish that an undertaking's conduct harmed competition. Nonetheless, the GDPR (2016) aims at achieving harmonization amongst the national data protection authorities, and clearly, do not rule out the possibility of application of substantive data protection by other national data protection authorities, leaving leaves a potential further scope for examination by other authorities, including the competition authorities. Yet, the proper legal test should potentially have to be based on a hypothetical situation with the effective competition; an infringement of competition framework would require a causal link between the abusive conduct and market power, that would have to establish that a dominant undertaking could impose its abusive terms and conditions.

Personalized pricing and consumer welfare.

In the digital economy, digital identity commodification is an emerging trend. Personal data is seen as a monetary value and often is perceived as being a key element required for the performance of free digital platforms, and/or discounts for various services or platforms. In addition, personal data and profiling algorithms are seen as a business assess and are often protected through trade secrets. Yet, individuals are still not fully conscious how their data is acquired, processed, analysed and monetary, hence lacking any understanding what is the value of their personal data, and its economic power within the digital economy.

Algorithms have become an unavoidable element of online consumers' lives, as they frequently rely on algorithm-digital-agent during their online shopping or social networking (Gal, Elkin-Koren 2017, p. 309). This is not all. Digital consumers also rely on algorithms while using price comparing websites, and often make a decision based on the use of such algorithm-based finding (Gal, Elkin-Koren 2017, p. 309). Such algorithms, often called 'digital butlers' (Gal, Elkin-Koren 2017, p. 309) could

potentially distinguish personal preferences based on consumers' previous choices and searches. Nevertheless, reliance on digital butlers could, in fact, be rational and convenient, since an average user spends less time on decision making; digital butlers' decision appears to be more sophisticated and is not subjected to any human biases (Gal, Elkin-Koren 2017, p. 322). Yet, this also poses a further problem. Although consumers are more likely to be psychologically happier when algorithm-based makes a decision for them, it, equally, could be deprived of their traditional choices (Gal, Elkin-Koren 2017, p. 322), which in long terms might negatively affect the quality of consumers' decision-making. Furthermore, the decision making process based on algorithms is, in fact, fragile (Picht, Freund 2018, p. 10), as humans are likely to repetitiously change their preferences. Therefore, to sum up, it is important to apprehend the ways in which algorithms pricing works. Consumers and competition authorise should remain watchful and ensure that algorithms are not used in any non-benevolent manner, i.e. are employed in inappropriate areas.

Consumer welfare could have been also impacted by the phenomenon of individual price differentiation, which, according to Ezrachi and Stucke (2016), could indicate a far-reaching effect on consumers (p. 117). Again, its impact on consumers might be demonstrated as two-sided. From one, sight, price differentiation could demonstrate pro-competitive features, such as increased output and/or lower prices (Ezrachi, Stucke 2016, p. 118). On the contrary, consumers' welfare could decree, if a maximum price is frequently changed. An assumption could have been put in placed, that often richer consumers could have been charged a lower price, and vice versa (Picht, Freund 2018, p. 11). It is worth mentioning that price differentiation is not illegal per se. Price differentiation, in fact, is difficult to be detected and usually attaches a negative connotation. Amongst the reason, one might detect the costs at which consumers become victim, who are forced to accept personalised offers. Data protection regime could step in if an undertaking in question violates data protection law in the process of individual price implementation. Consumers, in turn, might become more precautious if an undertaking in question demonstrates data discriminatory approaches, by protecting its personal data and hiding their digital selves, by deleting cookies and/or browsing history or browsing incognito.

Protection of individuals is a key feature in the digital economy, due to a proliferation of the data-driven platforms and services. It is necessary to provide an optimal balancing mechanism between protecting basic human rights and fostering innovation (Malgieri, Custers 2017). Yet, consumers, locked-into monopoly scenario, might not be able to switch to different product/service provider. There are a number of possible effects how the consumers might hide away their identities to avoid being victims of price discrimination strategies: amongst some recognised by literature are: the use of proxy services, not sharing of personal data, removal of browsing history or cookies (see Liu, Serfes 2004). In such a scenario, a platform would not be able to successfully

implement its price discrimination strategy. Botta (2019) discussed a number of potential limitation faced by this strategy. Firstly, only consumers in a capacity to understand the value of their data could diminish any influence of price discrimination by hindering their digital-self (Acquisti, Varian 2005, p. 367). It was further contrasted with digital illiterate users, who are unquestionably less cautious in trading their data on the Internet.

Many claims that mere personal data protection is not seen as a passive defence. In the sense of the big data era, it could be seen as being ineffective, because it is difficult to limit the big data opportunities (Custers 2016, pp. 1-6). Hence, more realistic and practically possible guidance is necessary to better protect the personal data of an individual. Nevertheless, there is a point worth mentioning here, before considering the impact of personal pricing on the consumers. The relationship between competition law, personal pricing and data protection appears to be ambiguous since competition law could not act as a facet supporting any data protection breaches. Unquestionably, there are overlapping features of data protection and competition law. Yet, competition law would not always be relevant in providing a sufficient protection to the personal data, as competition law aims at remediating anticompetitive behaviours, which aims at distributing the competitive equilibrium such as an abuse of dominant position.

In consideration of the consumer protection, the determination of collusive market plays an important role. Clearly, protection of the consumer against any algorithm pricing could be indicated that the potential collusion is identified by competition law agencies, which have a wider investigative cover than any private plaintiffs.

Furthermore, consumer welfare could have been negatively impacted by relying on hiding technologies (Belleflamme, Vergote 2016, pp. 141-144). In a monopoly scenario, digital illiterate users might benefit from price discrimination, as they do not know how a particular platform categorise them; users, hiding their digital-selves might be therefore subjected to uniform pricing, and might lose the pro-competitive elements of being 'price discriminated.' (Botta, Wiedemann 2019). Yet, it is questionable whether an online monopolist might freely implement the personalised pricing strategy. Firstly, considering the digital market, there could be a number of instance of online companies holding a sufficiently strong degree of market power, such as Amazon or Alibaba. Yet, interestingly, the price could have been affected by different aspects. In relation to the use of online platforms, Facebook offers Facebook Business Tools to different online shopping platforms. Then, an average user could see an advertisement of already visited by them shopping platforms. Based on personal data acquitted by Facebook, it is able to establish a close profile of the potential user, which would include genre, geolocation, or personal preferences. The aspect of geolocation could be important to distinguish the income of a particular potential consumer. Therefore, it could indirectly influence the personal pricing strategy. Hence, it is not always an online marketplace to influence personal pricing, as the phenomenon of

personalised pricing could have been achieved by different means such as privacy breach. In addition, high reliance on Internet could increase consumers' choices in terms of potential product suppliers. Based on the data accessibility of shopping platforms, there are two scenarios identifiable. Firstly, according to Armstrong (2006), price discrimination strategies could foster competition and thus increase consumer welfare (p. 19), since in firms could engage in potentially price-attractive behaviours to attract new consumers. This scenario could indicate that online retailers do not hold information about their potential consumers' brand preparation. Secondly, on a contrary, the symmetry scenario could be achievable in the situations, defined as Townley et al (2017), where firms have an access to a wider variety of data, which includes access to profiles of consumers and their preferences, and therefore can personalise the prices to certain consumers (p. 50). Consequently, there are ambiguous effects of price discrimination, with some having affecting brand preferences and the other on the symmetry of information. Therefore, it is important to consider the effect of weight up the effect of algorithm pricing on the competition law rules, as it could be, arguably, no reason why to ban a priori personalised pricing forms.

The effect of price discrimination is ambiguous both for the competition law regime as well as consumer welfare. Yet, with the help of behavioural economics, the problematic relationship has become easier to be understood. Nevertheless, the situation of price discrimination is not novel in the age of the digital economy. Forms of price discrimination which benefit vulnerable consumers have usually been accepted by consumers. However, in such a scenario, consumers might not have been aware of potential discrimination. Yet, interestingly, online platforms might use an algorithm for a variety of reasons, and consumers are unlikely to understand the phenomenon. Therefore, there could be several behavioural reasons available to understand why consumers might not like personalised pricing. Based on the analysis of the business models of online platforms, its vague terms of conditions and hindered practices could be amongst the features of why consumers 'lack of confidence.

4 A Way Forward?

The problem of personal pricing is often that it plays a very isolated role in competition law violation. In addition, the role of agency and enforcers is still uncertain and, potentially, could be insufficient to protect consumers from abuse of pricing algorithms. Hence, any adverse legal intervention could impact on the market development.

Any potential, EU-wide, regulatory changes, which could, in fact, introduce additional measures, should be only considered if during any case assessment evidence emerges that the current set of competition rules and its enforcement is inadequate to protect consumers from abuse. Yet, importantly, such changes are not meant to change

the competition rules, and its main ethos, but would introduce a new set of guidances which would allow to extend any rebuttable presumptions or reverse the burden of proof that competitive violation would lead to collusive price, damaging consumers.

Algorithm-driven programs have become a crucial instrument for market success in the sphere of the digital economy. Yet, algorithms are likely to demonstrate two-sided effect: on one hand, they could demonstrate positive effects on consumer welfare, whereas on the other— they could foster tacit collusion. Also, an increased use on algorithms might further emphasise a dominance of undertakings, with increased access to data.

Although the use of algorithms is not a novel situation, its current possibilities, often without any direct intervention from human, introduce new restraints. Algorithms 'use could present a positive chance to economy and society, as well as lead to an undesirable effect on a small or larger scale. The present use of algorithms, although could be seen as sophistically of a low level, their nature presents a more complex design, which impacts almost all human lives. Nowadays, there is no place for trust between undertakings (Petit 2017, p. 362). Another approach, proposed by Ballard and Naik (2017), aimed at outlawing algorithms which can disclose commercially sensitive data (p. 6). Nevertheless, one cannot assume that in all AI scenarios, undertakings would be acting in bad faith. Yet, more empirical data are needed to assess the possible consequences (Petit 2017, p. 362); pre-assessment of projected countermeasures would be the most effective approach (Gal, Elkin-Koren 2017, p. 50). AI could be important for modern industries, therefore its mechanism that impedes its development might be counterproductive for consumers 'long-term welfare (Parcu 2017, p. 32). The Commission should develop the policy method that would monitor high-speed and self-adjusting systems to ensure that competition law could be enforced in settings of the increased number of pricing customisation (Delta, Matsuura 2018, p. 121).

Considering the EU-wide-viewpoint, cases, where explicit collusion was detected by the use of algorithms, were noted to be anticompetitive, and illegal. Unquestionably, such cases are deeply problematic due to uncertain nature of algorithms and its difficult to detect design. Hence, its evidentiary requirements are difficult to be established. According to Picht and Freund (2017), such cases would allow to establish tacit instead of explicit collusion. Therefore, it is necessary to remember that EU competition law cannot be overstretched in certain instances. The case of deep-learning algorithms is uncertain, as the design of deep-learning algorithms enabled to achieve an outcome of tacit collusion autonomously. Deep learning algorithms, furthermore, presents challenges to the classical competition law, especially notions of causality, could be diminished as emphasis would be placed on the outputs.

Any potential regulation should be considered to address any recurrent concert which could result in negative outcomes. Hence, the current political climate, which appears to support better competition law enforcement in the digital economy, should

not hasten to enforce a new set of rules. Any potential set or rules should aim at keeping technological neutrality (Botta, Wiedemann 2019). Nevertheless, once fully implemented, algorithms, especially deep-learning, would require a competition law adjustment, as a prerequisite to demonstrate some potential dynamics of competition law to react on possible structural market changes resulting from excessive prices.

5 Conclusions

This paper considers the relationship between privacy and competition law, emphasising the relationship between privacy and competition law, as it has been noted that algorithm pricing constituted an invasion of consumers 'privacy. The dynamic changes occurring on the digital market introduced several new situations which competition law tried to address. The EU competition law in its approach is characterised in a prevailing consensus, confidently applying the already established competition rules.

Algorithms in itself might be seen as a worrying trend, due to its dynamic, and widely undiscovered nature. Recently, the German Competition Authority (BKA), in its proceeding against Facebook, indicated that collection of data on an unprecedented scale could result in data protection being of a weaker force to sufficiently address the apparent perils, and therefore, the use of competition law could be adequate to assess the entrepreneurial activity of a digital company. Within the scope of the EU Commission, the Google Shopping case demonstrated the carefulness in decision taking and relied on the already established competition law rules to determine the effect of the Google's conduct on the relevant market. A more nuanced approach has been introduced by the BKA, in their proceeding against Facebook, indicating that competition law and data protection could be interchangeably applied to the competition assessment.

Personalised pricing, unquestionably, harms final consumers. Within the remits of Article 102 of the TFEU, it is identifiable that there are two types of abuses prohibited: exploitative and exclusionary. Yet, the wording of Article 102 TFEU showed that there is no direct mention as to whether only the provision harming industrial consumers or final consumers should be sanctioned. By considering the algorithmic price spectrum on competition law, the cases such as the BKA's Facebook case, and any subsequent cases, might act as an example that privacy breaches could also be an important component of algorithmic pricing, which could be characterised by an actual price. Hence, it might be an indication that potentially privacy concerns might be seen as indirectly influencing competition law assessment. Also, the algorithmic pricing could be seen as being impacting individuals 'lives and their decision making processes by interfering with their behavioural autonomy. Yet, there are also pro-competitive aspects identifiable.

To adequately answer the such a complicated relationship and any evidence-based policy, there could be a need for the EU Commission to just keep their eyes open to how the algorithms are developed and consider them from defined competition law rules, which are properly embedded into the protection of the internal market.

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