European Competition Journal

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/recj20

The challenges of personalized pricing to competition and personal data protection law

Christophe Samuel Hutchinson & Diana Treščáková

To cite this article: Christophe Samuel Hutchinson & Diana Treščáková (2021): The challenges of personalized pricing to competition and personal data protection law, European Competition Journal, DOI: 10.1080/17441056.2021.1936400

To link to this article: https://doi.org/10.1080/17441056.2021.1936400

Published online: 14 Jun 2021.

EUROPEAN COMPETITION JOURNAL
https://doi.org/10.1080/17441056.2021.1936400

Routledge
Taylor & Francis Group

The challenges of personalized pricing to competition and personal data protection law

Christophe Samuel Hutchinson[a] and Diana Treščáková[b]

[a]Department of Legal Regulation of Economic Activity, Financial University under the Government of the Russian Federation, Moscow, Russian Federation; [b]Faculty of Law, Department of Commercial Law and Business Law, Pavol Jozef Šafárik University, Košice, Slovakia

ABSTRACT

The development of smart electronic devices are enabling online businesses to collect any data related to the consumer's online activity. Such an extensive trove of consumer personal data can be used for "personalized pricing". We have evaluated the challenges this form of price discrimination creates for competition and found that in jurisdictions such as the EU which prosecute exploitative abuses, the probability that personalized pricing might be assessed as an abuse of dominant position is high. Another issue raised by the collection and the processing of data for personalized pricing purposes is the growing invasion of privacy. In the EU, the General Data Protection Regulation foresees that personal data cannot be used without the consent of the consumer. As for online businesses processing personal data, they'd better stick to the provisions of the GDPR aiming to ensure greater transparency, if they are to avoid any risk of infringement of privacy law.

ARTICLE HISTORY Received 28 April 2021; Accepted 25 May 2021

KEYWORDS Personalized pricing; price discrimination; consumer willingness to pay; personal data collection; consumer surplus; abuse of dominant position; exploitative abuses; consumer welfare; EU competition law; personal data protection law

Introduction

The development of sensor-equipped smart devices and advances in data-analytics are enabling online companies to gain an increasing access to consumers' personal data. These businesses are now able to collect not only traditional information on a consumer such as his gender, age or level of education but also any data related to his online activity: the web pages he has visited, his geolocation, search queries or purchases on the internet. Such an extensive trove of consumer personal data can be used for a variety of purposes: to advertise a specific product

CONTACT Christophe Samuel Hutchinson KSYUchinson@fa.ru, sam_hutch2004@yahoo.fr

or service, adjust price to fluctuations in demand in real-time or for "personalized pricing", a form of price discrimination which consists in charging different customers different prices for the same product or service on the basis of their personal characteristics and behaviour.

In the context of the rapid growth of the digital economy, personalized pricing has become an increasingly debated topic. On the one hand, personalized pricing has the potential to dramatically improve welfare for sellers and low-end consumers. On the other hand, personalized pricing is perceived by large swathes of the public as an unfair practice, potentially dampening trust in digital markets. 91% of the respondents to a survey carried out among 1,500 U.S. households objected to retailers charging consumers different prices for the same product using personal information, against 8% who gave a positive answer.[1] A survey of 20,000 consumers published by the European Commission in 2018 revealed that an equally low proportion of respondents perceived personalized pricing as primarily having benefits.[2]

People's suspicion towards personalized pricing is partially based on facts. For instance, it has been reported that *Amazon.com* sold the same DVD to different people at different prices. When a regular *Amazon* customer deleted the cookies from his computer, he noticed that the price of the DVD that he intended to buy online suddenly dropped. It was thus inferred that customers who had already placed orders with *Amazon* were offered higher prices than new consumers.[3] Many consumers reacted angrily.[4] *Amazon* hastily issued a press release stating it was merely experimenting with random discounts and that it would reimburse any customer who paid above average prices. *Amazon*'s CEO Jeff Bezos then said: "We have never tested and we never will test prices based on customer demographics".[5]

[1] Joseph Turow, Lauren Feldman and Kimberly Meltzer, 'Open to Exploitation: America's Shoppers Online and Offline (Working Paper)' (2005). Annenberg Public Policy Center, University of Pennsylvania, p. 23, <https://repository.upenn.edu/asc_papers/35> accessed 25 January 2021.

[2] European Commission, 'Consumer Market Study on Online Market Segmentation through Personalized Pricing/Offers in the European Union', (Final report produced under the EU Consumer Program in the framework of a service contract with the Consumers, Health, Agriculture and Food Executive Agency acting under the Mandate from the European Commission (June 2018)), <https://ec.europa.eu/info/sites/info/files/aid_development_cooperation_fundamental_rights/aid_and_development_by_topic/documents/synthesis_report_online_personalisation_study_final_0.pdf> accessed 27 January 2021.

[3] Jennifer Valentino-Devries, Jeremy Sinder-Vine and Ashkan Soltani, 'Websitehs Vary Prices, Deals Based on Users' Information' *The Wall Street Journal* (New York, 24 December 2012), <http://www.wsj.com/articles/SB10001424127887323777204578189391813881534> accessed 23 January 2021.

[4] Paul Krugman, 'Reckoning; What Price Fairness?' *The New York Times* (New York, 4 October 2000), <www.nytimes.com/2000/10/04/opinion/teckonings-what-price-fairness.html> accessed 24 January 2021.

[5] *Amazon News Room*, 27 September 2000 cit. in Frederik Zuiderveen Borgesius, Joost Poort, 'Online Price Discrimination and EU Data Privacy Law' [2017] 40 Journal of Consumer Policy 347–366, <https://link.springer.com/article/10.1007/s10603-017-9354-z> accessed 22 January 2021.

One of the reasons for the public's distrust towards personalized pricing is the surreptitious way it is done. This has been the case for instance with *Uber*'s new tariff system. Some customers reported identifying price differences based on the brand of their smartphone,[6] *Apple's IOS* users paying a higher fee than the users of *Google's Android* operating system compatible phones. Some passengers and drivers complained that such a system is unethical.[7] Others on the contrary have considered this system as fair on the assumption that today "society is more willing to accept wealthy people paying higher fares" as MIT Professor Chris Knittel suggested.[8] Despite the dislike of personalized pricing by a large portion of the public, such a practice, as this paper shows, is not necessarily detrimental to welfare and consumer surplus, as it has the potential to increase product affordability for a large number of consumers and significantly improve the sales of firms. As this conduct involves a business-consumer relationship, we have evaluated the challenges it creates for competition and found that in countries which investigate exclusionary abuses and apply total welfare standard, the probability that personalized pricing might be assessed as a competition risk is low. On the contrary, in jurisdictions which prosecute exploitative abuses and apply a consumer welfare standard, such a risk is high.

Another important issue connected with personalized pricing is the growing erosion of privacy due to the greater ability of companies to collect and process information about internet users.[9] Most of the time, consumers are unaware of how and to what ends their data is being used. The General Data Protection Regulation (GDPR), the EU's central piece of legislation in this field, foresees that personal data cannot be processed and used without the consent of the consumer (the "data subject"). As for online businesses (the "data controllers"), they'd better stick to a set of rules provided for by the GDPR aiming at ensuring a greater transparency in their use of consumers' personal data, if those companies are to avoid litigation for their infringement of privacy law.

[6]Arwa Mahdawi, 'Is Your Friend Getting a Cheaper Uber Fare Than You are?' *The Guardian* (London, 13 April 2018) <https://www.theguardian.com/commentisfree/2018/apr/13/uber-lyft-prices-personalized-data> accessed 18 January 2021.

[7]Eric Newcomer, 'Uber Starts Charging What It Thinks You're Willing to Pay' *Bloomberg* (New York, 19 May 2017), <https://www.bloomberg.com/news/articles/2017-05-19/uber-s-future-may-rely-on-predicting-how-much-you-re-willing-to-pay> accessed 19 January 2021.

[8]Ibid.

[9]Turow (n 1) 108–110.

Method and materials

This research introduces the concept of personalized pricing which has been used in a variety of circumstances, not always with the same meaning. It then elaborates on the different forms of personalized pricing and subsequently focuses on the mechanisms behind personalized pricing, its specific market conditions, empirical evidence and multi-dimensional effects. Finally, as personalized pricing involves a business-consumer relationship, this paper assesses this practise under the scope of competition law and personal data protection law.

The definition of personalized pricing

At times personalized pricing is used as an alternative expression to price discrimination, at others, to refer to dynamic pricing.

The difference between personalized pricing and dynamic pricing

Dynamic pricing consists in adjusting prices based on variables that are not specifically related to the customer. Dynamic pricing is more concerned by the time of day, or the available supply and the volume of traffic to a product detail page. It doesn't care who the customer is and how loyal he may be. Of course, the price may change, but its level will not depend on the greater or lesser degree of wealth of each consumer. With personalized pricing, the exact opposite occurs. In this case, it's just a matter of who the customer is and what the retailer is trying to get him to do. A very loyal customer enjoying high purchasing power may receive an offer that is priced differently from that of a cherry-picking unknown customer who has no history with the retailer.[10]

The difference between personalized pricing and price discrimination

The United Kingdom's Office of Fair Trade (OFT) defines personalized pricing as "the practice whereby companies can use information that is observed, offered voluntarily, inferred or collected about individuals' conduct or characteristics, based on what the business thinks they are willing to pay".[11]

[10]Retail Systems Research, 'Dynamic vs. Personalized Pricing' (21 March 2017) <https://www.rsrresearch.com/research/dynamic-vs-personalized-pricing>accessed 22 January 2021.

[11]Office of Fair Trading, 'Personalized pricing-Increasing Transparency to Improve Trust' (May 2013), p. 3, <https://webarchive.nationalarchives.gov.uk/20140402165101/http://oft.gov.uk/shared_oft/markets-work/personalised-pricing/oft1489.pdf> accessed 28 January 2021.

Two important elements are included in the definition proposed by the OFT. First, since price discriminations between different consumers are established by businesses it logically emphasizes the *business-consumer relationship* as opposed to business to business relations. Secondly, the discrimination in question is based on *information relating to personal characteristics*. These two constitutive elements are helpful to distinguish personalized pricing from the more general concept of price discrimination which consists in charging different customers different prices based on the customer's willingness to pay for a product or a service. Given the broad definition of the OFT, it appears that personalized pricing can be ranked among the alternative categories of price discrimination.

The alternative categories of personalized pricing

In his classic work "The Economics of Welfare"[12] published in 1920, British economist Arthur Cecil Pigou identified three degrees of price discrimination:

- *First degree price discrimination* refers to a situation where a consumer is charged a price equivalent to his maximum willingness to pay. First degree price discrimination allows a company to extract all of the *consumer's surplus*, that is to say, the difference between what the latter is willing to pay and what he ends ups paying for a good or a service. Such an extreme form of discrimination is never observed in practice, as companies cannot know the exact *reservation price of the consumer*, i.e. the maximum price that he is willing to pay.
- *Second degree discrimination* refers to a pricing system according to which the price of a commodity does not depend on the personal characteristics of the customer but on the quantity of the commodity he buys. For instance, if a moviegoer intends to pay a lower price for popcorn per gram, he would do better to choose a large box rather than a small one. In other words, in second degree price discrimination, a firm doesn't need consumer information to set the price, as it is the consumer who self-selects: he chooses a different price by selecting a different quantity.[13]

[12] Arthur Cecil Pigou, *The Economics of Welfare* (Macmillan 1920), 743–787.
[13] Frederik Zuiderveen Borgesius and Joost Poort, 'Online Price Discrimination and EU Data Privacy Law' [2017] 40 Journal of Consumer Policy 352 <https://link.springer.com/article/10.1007/s10603-017-9354-z> accessed 22 January 2021.

- *Third degree price discrimination* occurs when the company charges different prices to different groups of customers. For example, certain categories of consumers considered as "vulnerable"[14] such as children under a certain age, students or retirees may benefit from discounts at museums and cinemas.

In the light of these considerations, this paper opts for a broad approach to personalized pricing, defined here as any practice of price discrimination of end consumers on the basis of their personal characteristics and behaviour, from which it follows that the level of price is an increasing function of consumers' willingness to pay (Figure 1).

The concept of personalized pricing having been defined, it remains to be seen how firms can personalize prices.

The mechanisms behind personalized pricing

Every business willing to implement personalized pricing can collect data on the consumer's personal characteristics and conduct using different types of collection data mechanisms such as:

- *volunteered data* (for instance consumer's name, date of birth, professional occupation, address of delivery, email address, phone number) collected through forms filled by consumers on a voluntary basis.
- *observed data* (browsing history, website visits, past purchase, IP address, operating system, past purchases, website visits, user's location, "likes in social networks") gathered via cookies on consumers' electronic devices
- *inferred data* (health, income, responsiveness to ads, risk profile, consumer loyalty, hobbies, behavioural bias, political ideology) selected and analyzed by self-learning machines to deduct certain consumer characteristics and behaviour.

Once personal data has been collected, the firm uses them to estimate the consumer's willingness to pay. Based on this estimate, the company must set the optimal price for the consumer. Logically, companies should charge consumers the full value of their willingness to pay in

[14]Marco Botta and Klaus Wiedermann, 'To Discriminate or Not to Discriminate? Personalized Pricing in an Online Market as Abuse of a Dominant Position' [2020] 50 The European Journal of Law and Economics 384.

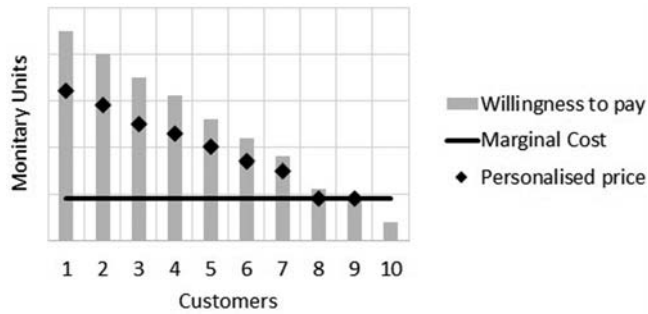

Figure 1. Illustration of personalized pricing.

order to maximize their profits. In practice, they tend to set lower prices to reduce the risk of loss of consumers whose willingness to pay might have been overestimated.

Having described the personalized pricing mechanisms used by firms as part of their business strategies (Figure 2), we will now focus on the market conditions under which custom pricing is most likely to be observed (Figure 2).

Market conditions for personalized pricing

Economists have identified three market conditions necessary for companies to implement an effective price discrimination strategy:

- *A minimum level of market power*

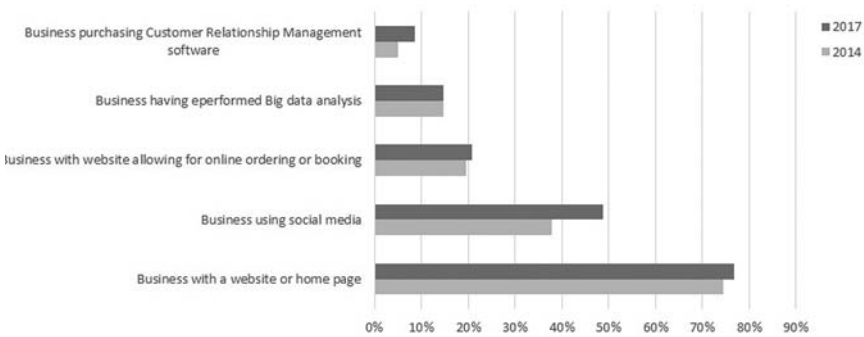

Figure 2. Use of data collection and data-analytics tools by business in OECD member States.

The business involved must have some market power. Such a power is measured by the firm's capacity to set prices above the marginal cost curve through economies of scale and network effects. The greater a company's market power, the more likely it will be successful in implementing a personalized pricing policy.

- *Limited arbitrage*

The company must prevent arbitrage. Arbitrage is the client's capacity to resell the product he bought from a company to customers willing to pay a higher price.[15] Personalized pricing can only be effective if arbitrage is limited. Arbitration can be deterred in several ways. For example, the company may choose to customize the product, void any warranty on resale, or make servicing the product more difficult or costly for customers who buy on the grey market.[16]

A company can easily limit arbitration for the sale of online services such as booking of hotel rooms, flights, sporting events, museums or concerts since tickets are often non-transferable. A company can also avoid arbitrage when selling digital content such as newspaper subscriptions, e-books, streamed movies or online courses as the content of such products and services is only accessible through the consumer's personal account. A firm, on the other hand, will have more difficulty in preventing arbitrage in the sale of tangible durable goods which can be more easily resold.

- *Identification of consumer's valuation of a product*

Lastly, the firm must be able to estimate the valuation of a product by consumers and thus adjust its prices accordingly. The expression *consumer's valuation* should be understood as the price a consumer is willing to pay for a product or service. To efficiently estimate the consumer's willingness to pay, a company should have adequate computational resources and access to a large volume and wide array of data. In the pre-digitalization era, the access to such information would have been costly. But the surge of big data over the last decade has considerably reduced data collection costs at customer level, thus enabling firms to target customers with personalized pricing plans more easily.[17]

[15] Ariel Ezrachi and Maurice E. Stucke, *Virtual Competition: The Promise and Perils of the Algorithm-Driven Economy* (Harvard University Press 2016), 86.

[16] Federal Trade Commission, Horizontal Merger Guidelines, 10 August 2010, Para 3 <https:www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf> accessed 28 January 2021.

As efficient personalized pricing requires a combination of a minimum level of market power, a mechanism limiting arbitrage and the firm's technological capacity to estimate the consumer's willingness to pay, the businesses which are more likely to implement it successfully are online retailers and giant online platforms.

Empirical evidence of personalized pricing

Existing evidence of personalized pricing is limited. Most of it has been disclosed by media reports. In 2012, the *Wall Street Journal* (*WSJ*) revealed that *OrbitzWorldwide*, an online travel agency, was offering higher prices for hotel bookings to *Mac* users than to PC ones and that only the latter were entitled up to a 50% discount.[18] Two years earlier, the *WSJ* had reported that *Capital One Financial Corp*. "was using personalization technology to decide which credit cards to show first-time visitors to its website".[19]

The *Journal* also uncovered price discrimination by the online and brick-and-mortar office supply superstore *Staples, Inc*. It found that *Staples*' pricing algorithms charged different prices on its websites after estimating the customers' location from their IP address. *Staples* apparently considered the customer's distance from its rivals *OfficeMax's* or *Office Depot's* brick-and-mortar stores: If rival stores were within 20 miles or so, *Staples.com* usually showed a discounted price.[20]

Apart from those anecdotal cases, some more general data tend to confirm the growing use of personalized pricing. A survey by *Deloitte* with 500 companies found that 40% of the retailers interviewed who have adopted artificial intelligence (AI) used it for personalized pricing and promotions in real time.[21]

Despite the fact that the existing evidence of personalized pricing does not yet enable to conclude that this behaviour is generalized in the digital

[17]The White House. Council of Economic Advisers, 'Big Data and Differential Pricing' (February 2015), <https://obamawhitehouse.archives.gov/sites/default/files/whitehouse_files/docs/Big_Data_Report_Nonembargo_v2.pdf> accessed 27 January 2021.
[18]Valentino-Devries (n 4).
[19]Emily Steel and Julia Angwin, 'On the Web's Cutting Edge, Anonymity in Name Only' *The Wall Street Journal* (New York, 4 August 2010), p. 1 <https://www.wsj.com/articles/SB10001424052748703294904575385532109190198> accessed 2 February 2021.
[20]Valentino-Devries (n 4).
[21]Kevin Hogan, 'Consumer Experience in the Retail Renaissance: How Leading Brands Build a Bedrock with Data' (*Deloittedigital*, 6 June 2018) <https://www.deloittedigital.com/us/en/blog-list/2018/consumer-experience-in-the-retail-renaissance--how-leading-brand.html> accessed 27 January 2021.

world, it is quite clear that it already has ambiguous and multi-dimensional effects.

The multi-dimensional effects of personalized pricing

The most obvious benefit of personalized pricing is that it has the potential to increase allocative efficiency by serving low-end consumers who would otherwise be underserved. To illustrate such a positive effect, let's take the example of a one litre bottle of milk whose market price would be 2 dollars. If Joe, one of its consumers, is willing to pay up to 5 dollars for the litre and Bob, another consumer is ready to spend no more than 1 dollar on the same bottle, then only Joe will purchase the milk (and retain a 3 dollars surplus) while *Diary Farmers of America Inc.* (*DFA*), the supplier, will only make 2 dollars in revenue. But if *DFA* has the resources and is permitted to personalize prices, then both Joe and Bob will be able to purchase the milk (each at their personal reservation price i.e. the maximum price he's willing to pay) and the *Diary Farmers of America* will make 6 dollars in revenue instead of 2 dollars with a uniform pricing system.

We can infer from this example that personalized pricing allows a more efficient allocation of resources. Low-end consumers such as Bob are better served and sellers such as *DFA* sharply increase the level of their sales. It follows from this observation that "from an economic viewpoint, there is no rationale for banning personalized pricing *per se*".[22]

Despite these undeniable economic benefits, personalized pricing is still viewed with suspicion by a majority of the public. A survey conducted in the United States showed that American adults overwhelmingly object to all forms of price discrimination as being "ethically wrong".[23] As for Europeans, 20% of them said they had had a bad experience linked to personalized pricing, according to a survey published by the European Commission (Figure 3).[24]

There are several reasons for the public's mistrust towards this practice. Firstly, if it is true, as we've just seen, that personalized pricing can lead to a welfare improvement for both low-end consumers and sellers, it will also lead to a loss of welfare for some consumers. Indeed,

[22]Marc Bourreau, Alexandre Streel and Inge Graef, 'Big Data and Competition Policy: Market Power, Personalized Pricing and Advertising' (2017), *Centre on Regulation in Europe*, Project report, p. 8 <https://papers.ssrn.com/sol13/papers.cfm?abstract_id=2920301&download=yes > accessed 17 January 2021.
[23]Turow (n 1) 4.
[24]Commission (n 2).

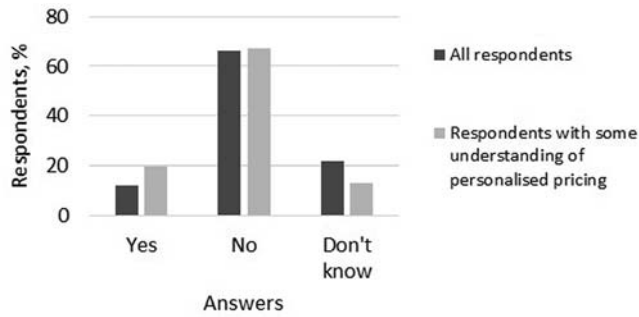

Figure 3. Consumers' negative experiences related to personalized pricing in EU member States.

high-end consumers end up paying a higher percentage of their resources for the same product than they would without personalized pricing. Because personalized pricing charges wealthier consumers more than the uniform pricing system does, accumulating resources is made more difficult for them.

Secondly, personalized pricing makes it harder for consumers to discover a general market price and to assess their options. For example, if *Amazon* was to engage in personalized pricing and the customer was to somehow notice it, the latter might switch to *Walmart*. But if *Walmart* and other retailers engage in personalize pricing, it will be increasingly difficult for the consumer to find the competitive benchmark.

Thirdly, personalized pricing transfers all the high-end consumers' surplus to sellers and producers. This is of a particular concern for the competition authorities who tend to prioritize the protection of *consumer welfare,* defined as the difference between the consumer's willingness to pay and what he actually ends up paying.[25]

Discussion and results

Competition policy approach to personalized pricing

In this section, we'll assess personalized pricing under the scope of competition law and discuss whether such a practise is to be considered as an abuse of dominance when carried out by a firm in dominant position.

[25]"Glossary of statistical terms" (2002) *Organization for Economic Cooperation and Development*'s Statistics Portal <https://stats.oecd.org/glossary/detail.asp?ID=3305> accessed 29 January 2021.

With this in mind, we will first of all summarize the current legislation and practice with regard to abuse of dominance. We will then examine the circumstances under which personalized pricing can be characterized as an abuse of dominant position.

Legislation and practice on abuse of dominance

The abuse of a dominant position is together with prohibited agreements one of two main breaches of competition law. It can be defined as any "anti-competitive business practice in which a dominant firm may engage in order to maintain or increase its position in the market".[26]

In most jurisdictions, three basic conditions must be met in order to qualify a behaviour as an abuse of dominance:

- Firstly, the company involved should be in a dominant position on the relevant market and enjoys a certain market power likely to unilaterally harm the competitive process.
- Secondly, the conduct under consideration should then fall into a category of abuse provided for by law. Taking into consideration the fact that a dominant position is not in itself illegal, only its abuse, competition authorities can only establish an infringement if they identify an anti-competitive behaviour belonging to one of the two following categories of abuse: exclusionary and exploitative. While exclusionary abuses are "behaviour by dominant firms that are likely to have a foreclosure effect on the market, i.e. which are likely to completely or partially deny profitable expansion in or access to a market or potential competitors",[27] exploitative abuses can be defined as attempts by a dominant undertaking to use the opportunities provided by its market strength in order to harm consumers. While exclusionary abuses, such as predatory pricing or refusal to sell, are at the heart of competition law enforcement, exploitative abuses such as unfair commercial terms and conditions, excessive pricing or price discrimination are not prosecuted in most countries. This is the case for instance in the United States where exploitative abuses are not

[26] R. Shyam Khemani and Daniel Shapiro, "Glossary of Industrial Organization Economics and Competition Law" (1993), OCDE, p. 9 <http://www.oecd.org/regreform/sectors/2376087.pdf> accessed 28 January 2021.

[27] Pinar Akman, 'Exploitative Abuse in Article 82EC: Back to Basics?' University of East Anglia, *ESRC Center for Competition Policy Working Paper* No.09-1 (2008), p. 8 <http://competitionpolicy.ac.uk/documents/107435/107587/1.105848!wp09-1_exploitative_abuse_in_article82EC_PA.pdf> accessed 16 January 2021.

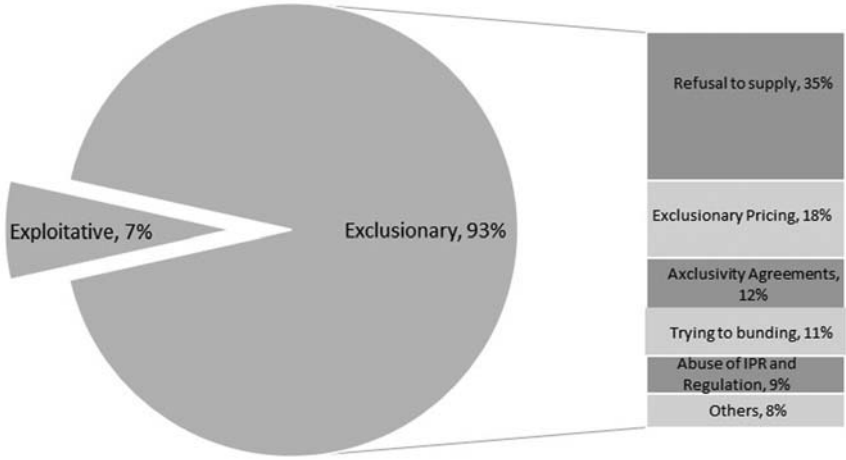

Figure 4. Categories of abuse of dominance enforced by the EU between 2000 and 2017.

contemplated by antitrust law. In the European Union, on the contrary, abuses of exploitation are sometimes investigated as shown in Figure 4.

- Thirdly, the behaviour must not lead to efficiency gains that offset anti-competitive effects. This can be checked using the "effects-based approach" according to which if a behaviour does not in itself constitute an infringement, it must be evaluated on a case-by-case basis and subject to the "rule of reason"[28] which consists in weighing the potential anti-competitive effects of a practice and its efficiency gains. If the first outweigh the second, then the conduct in question will be considered as an abuse of dominant position and therefore as infringement of competition rules.
- *Qualifying personalized pricing as an abuse*

Article 102 (c) of the Treaty of the Functioning of the European Union (TFEU)[29] can be used as a tool to assess whether an instance of personalized pricing may be considered as an abuse of dominant position. According to this provision, a firm in dominant position engages in an abuse when it applies "dissimilar conditions to equivalent transactions

[28]Ibid.
[29]Treaty of the Functioning of the European Union, *Official Journal C 326, 26/10/2012* <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:12012E/TXT&from=EN> accessed 30 March 30 2021.

with other trading parties, thereby placing them at a competitive disadvantage". Since personalized could imply a discrimination between, for instance, high-end and low-end consumers willing to purchase the same product or service, such a practice might fit the qualification "dissimilar conditions to equivalent transactions" mentioned in article 102 (c). Nevertheless, since those dissimilar conditions only apply to "business partners", there remains a possibility that courts interpret this part of article 102 (c) as concerning business to business relations and not business to consumer relationship, a constitutive element of personalized pricing. It is therefore not surprising that the European competition authorities haven't opened a single case regarding price discrimination towards consumers in the form of personalized pricing yet.

One could hypothetically assess personalized pricing as an exploitative abuse, at least in countries where such a category of abuses are contemplated by competition law, as it is the case in EU member States. To this end, the European competition authorities consider personalized pricing as excessive or unfair pricing under the condition of a proof that higher prices are charged to some consumers for reasons not justified by costs. In other countries such as the United States where exploitative abuses are not covered by antitrust law, there is little chance that personalized pricing will be prosecuted as shown in Table 1.

Under certain circumstances, it may also be possible to characterize personalized pricing as exclusionary abuse, particularly whenever companies lower their prices for some of the competitors' customers with the aim of foreclosing the market. Known under the expression of "selective pricing", this strategy has led to the opening of investigations by the European Commission in the *Compagnie Maritime Belge de Transports*[30] and *Irish Sugar* cases.[31] Nonetheless such an infringement which can only be established when some form of predation takes place i.e. when prices are set below production cost for the sole purpose of eliminating competitors, does not address the broader concern about personalized pricing as a mechanism to exploit consumers.

In the event that personalized pricing corresponds to at least one of two the categories of abuse (exclusionary and exploitative) mentioned above, the effects-based approach may be used to identify the set of circumstances according to which a particular instance of personalized pricing can be considered as detrimental to competition.

[30]Case C-395/96 P, *Compagnie maritime belge transports SA v. Commission,* EU:C:1998:518.
[31]Case T-228/97, *Irish Sugar plc v. Commission*, EU:T:1999:246.

Table 1. Types of abusive practice under which personalizing pricing might fall according to the types of jurisdiction.

Types of competition risks Types of jurisdiction	Possibility that personalized pricing shall be considered as predatory practice towards competitors	Possibility that personalized pricing shall be considered as an excessive and unfair practice towards the consumer
Jurisdictions where both exclusionary and exploitative abuses are contemplated by competition rules (EU member States)	Yes	Potential
Jurisdictions where only exclusionary abuses are contemplated by competition rules (United States, Canada, Mexico, North and Latin America)	Yes	No

The result of an assessment of the effects-based approach may depend on whether consumer welfare or total welfare is the ultimate aim of competition law in a specific jurisdiction. According to a survey by the International Competition Network (ICN), 89% of the ICN Member States consider consumer welfare as the primary aim or one of the aims of their competition legislation (Figure 5).[32]

In a minority of countries such as Norway, South Africa, Canada, New Zealand and Australia, total welfare is the main objective of their competition legislation. In other countries such as the United States, consumer welfare is one of the goals of antitrust law. There, antitrust authorities also have the possibility to assess a practice bearing in mind the promotion of economic efficiency not necessarily passed through to consumers. In a third group of countries, such as the EU Member States, competition authorities tend to prioritize the protection of consumer welfare. As shown in Table 2, the likelihood that personalized pricing may have detrimental effects on consumer welfare and therefore be considered as an infringement of competition rules is higher in this third group of jurisdictions than in the first two groups of countries which give more weight to total welfare.[33]

In conclusion, in jurisdictions which investigate exclusionary abuses and apply total welfare standard, the probability that personalized

[32]ICN, 'Competition Enforcement and Consumer Welfare-Setting the Agenda' *Proceedings of the International Competition Network Conference* (May 2011) p. 11 <https://www.internationalcompetitionnetwork.org/wp-content/uploads/2019/11/SP_CWelfare2011.pdf> accessed 29 January 2021.

[33]OECD, 'Rethinking Antitrust Tools for Multi-Sided Platforms' (2018) <http://dx.doi.org.www.oecd.org/competition/rethinking-antitrust-tools-for-multi-sided-platform.htm> accessed 29 January 2021.

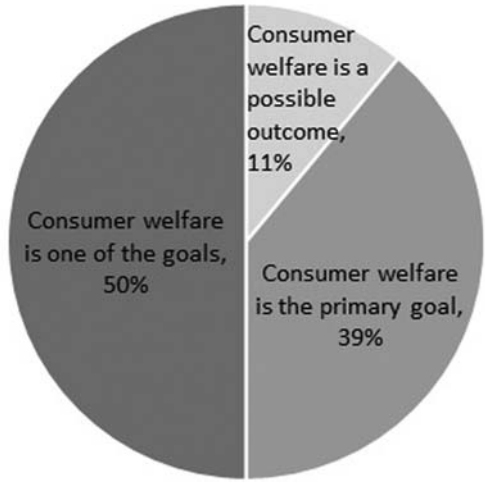

Figure 5. The role of consumer welfare among the goals of the ICN member States' antitrust laws.

Table 2. Risk of detrimental effects of personalized pricing according to the competition goals of a jurisdiction.

Main objective(s) of the competition policy in a given jurisdiction	Jurisdictions where total welfare is the goal of competition law (Australia, Canada, New Zealand, Norway, South Africa)	Jurisdictions where consumer welfare is the main goal of competition law (EU)	Jurisdictions where consumer welfare is one of the goals of competition law (US)
Competition risk of personalized pricing	Low	High	Potential

pricing might be assessed as an abuse of dominant position is low. On the contrary, in jurisdictions which prosecute exploitative abuses and apply a consumer welfare standard, such a risk is high.

Personal data protection law approach to personalized pricing[34]

Another important issue connected with personalized pricing is the growing erosion of privacy due to the greater ability of companies to

[34]The section on Personal Data Protection was supported by the Slovak research and development agency under Grant APVV-17-0591 Human Legal and Ethical Aspects of Cybersecurity and Grant APVV–19–0424 "Innovative corporation: intra-corporate transformations, digital challenges and the rise of artificial intelligence".

collect and process information about internet users.[35] The use of this data by online companies may indeed be at odds with personal data protection and privacy law. In the EU, the central piece of legislation in this field is the Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data which repealed Directive 95/46/EC (General Data Protection Regulation).[36] The importance of this instrument in the EU's overall legal framework on personal data protection is such that any normative act adopted as a *lex specialis* to the General Data Protection Regulation (GDPR) should provide the same or a greater level of protection to the end-user than this Regulation.

The GDPR aims to ensure that the processing of personal data happens fairly, lawfully, and transparently (Art.5, 1 (a) of the GDPR). It grants rights to people whose data are being processed (data subjects) and imposes obligations on parties that process personal data (data controllers such as companies). European data protection law is triggered when "personal data" is processed. The storage and the analysis of data falls within the definition of processing (Art. 4(2) GDPR). Personal data is "any information relating to an identified or identifiable natural person ('data subject')" (Art.4 (1) GDPR). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data or an *online identifier* (Art. 4(1) GDPR). A widespread type of such an identifier is a cookie with a unique identifier tied to an individual.[37] Since personalized pricing entails the processing of personal data of an identified or identifiable natural person via the mean of identifier (as seen in Section II -"The mechanisms behind personalized pricing"), the GDPR applies to most if not all types of personalized pricing. Another important EU legislative tool in the field of personal data protection is the Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of

[35]Turow (n 1) 108–110.

[36]Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data which repealed Directive 95/46/EC (General Data Protection Regulation) [2016] OJ L 119/1 <https://eur-lex.europa.eu/eli/reg/2016/679/oj> accessed 5 March 2021.

[37]Regina Hučková, Pavol Sokol and Laura Rózenfeldová, L.: 4th industrial revolution and challenges for European law (with special attention to the concept of digital single market). In: EU law in context – adjustment to membership and challenges of the enlargement: Conference book of proceedings. – Osijek: Sveučilište Josipa Jurja Strossmayera u Osijeku, 2018. p. 208 <https://hrcak.srce.hr/ojs/index.php/eclic/issue/view/313/Vol2> accessed 17 March 2021.

personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications)[38] which will be repealed once the proposal for a Regulation on the respect for private life and the protection of personal data in electronic communications and repealing Directive 2002/58/EC (Regulation on Privacy and Electronic Communications)[39] will be adopted. A thorough examination of this proposal which was published by the European Commission on 10 January 2017, has led us to identity several loopholes regarding personal data protection in electronic communication. Such is the case, for instance, of Article 6 which provides a weaker level of protection for metadata than for electronic communication content. According to this provision, the consent of the sender concerned is sufficient in the case of metadata, whereas in the case of electronic communication content, the consent of all end-users (i.e. both the sender and the recipient) is required. Such an imbalance doesn't seem to be justified as those two categories of data are exposed to an equal risk of breach not mentioning the fact it is not possible to process metadata without the consent of all end-users. The proposal also fails to deal with the problem that end-users may only access websites and applications on the condition that they give their prior consent which triggers the installation of tracking technology on the electronic devices they use such as cookies, programme recognition or the insertion of unique identifiers. The cause for the prohibition of access being made conditional on the consent to surveillance has recently been strengthened by a survey on privacy and electronic communications, which found that almost two-thirds of respondents considered it unacceptable for their online activities to be monitored in exchange for unrestricted access to a website (64%)[40] The issue of personal data protection and privacy is also being addressed by other organizations whose activities extend beyond EU borders. Such is the case of the OECD which has adopted a Recommendation of the Council Concerning Guidelines

[38]Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications) [2002] OJ L 201 <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32002L0058> accessed 18 March 2021.

[39]Proposal for a Regulation on the respect for private life and the protection of personal data in electronic communications repealing Directive 2002/58/EC (Regulation on Privacy and Electronic Communications) COM/2017/010 final – 2017/03 (COD) available on https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52017PC0010

[40]Flash Eurobarometer 443: e-Privacy, published in December 2016 <https://ec.europa.eu/commfrontoffice/publicopinion/index.cfm/Survey/getSurveyDetail/instruments/FLASH/surveyKy/2124> accessed 6 March 2021 OECD.

Governing the Protection of Privacy and Trans border Flows of Personal Data (OECD Privacy Guideline)[41] which provides that personalized pricing may be particularly harmful if there are no effective mechanisms allowing consumers to change their privacy options in order to prevent their data from being collected for personalize pricing purposes.[42] The aim of the aforementioned texts is to provide a legal environment in which the consumer can be digitally active without fearing a breach of her/his personal data and privacy rights by online businesses. Obtaining customer information for personalized pricing purposes can occur in several ways. It can be done through the so-called club or customer cards or through profiling, "an automated processing of data to analyse and to make predictions about individuals" (art. 4 (4) GDPR). Taking into account the staggering growth of online shopping, particularly during the ongoing pandemic, we will focus our attention on the profiling of consumers who use electronic communication services. According to point 30 of the GDPR, profiling may be applied to natural persons whose personal data can be obtained through different types of collection data mechanisms already examined in section II. The WP171 Data Protection Working Party[43] set up under Article 29 of the GDPR Regulation classifies profiles in two types. The first one is the so-called predictive profile which consists in the long-term monitoring of the behaviour of certain users or a group on the Internet. A predictive profile is the result of the combined use of tracking cookies and data mining software. The second type of profile is the so-called nominal profile. It consists of personal data that individuals provide on the website they visit by, for instance, filling in a registration form. Both of these types of profile can be merged into one in order to create an overall picture of the consumer which may be used for personalized pricing purposes. If a seller obtains personal data to that end, the consumer often has no control over their processing, the method of processing, or their future use. He also doesn't have information on whether this data is processed in accordance with the principles of personal data protection or whether it is kept only for the time and extent which not exceeding

[41] OECD, Recommendation of the Council concerning Guidelines governing the Protection of Privacy and Transborder Flows of Personal Data (2013) [C(80)58/FINAL, as amended on 11 July 2013 by C(2013)79] <https://www.oecd.org/sti/ieconomy/2013-oecd-privacy-guidelines.pdf> accessed 12 March 2021.

[42] OECD, 'Personalized Pricing in the Digital Era' (2018), p. 34 <https://one.oecd.org/document/DAF/COMP(2018)13/en/pdf>Accessed on March 23, 2021.

[43] Art. 29 of Data protection Working Party: Opinion 2/2010 on online behavioural advertising adopted on 22 June 2010, p. 7 <https://core.ac.uk/download/pdf/194023974.pdf> accessed 7 March 2021.

what is necessary for the seller to achieve his objectives, in compliance with *the principle of proportionality*. As a result, the collection of consumer data may come into conflict with the protection of personal data and privacy legislation. Hence the need for Data Protection Authorities to step in. The Spanish Data Protection Authority did just that when it imposed a total fine of 6.000.000 EUR on *Caixabank* S.A. for the unlawful processing of clients' personal data (4.000.000 EUR) and for not providing sufficient information regarding the processing of personal data (2.000.000 EUR). In the case at hand, the Spanish Data Protection Authority considered that the document designed to comply with the information did not include enough information regarding the categories of personal data concerned, nor information about the purposes of the processing for which the personal data is intended as well as the legal basis for the processing, especially regarding those processing activities based on the company's legitimate interest. Consequently, the Spanish Data Protection Authority concluded that *Caixabank* had violated Articles 13 and 14 of the GDPR.[44] Another illustration of the collision between personal data collection and the current legislation appeared in case C-673/17 *Planet49 GmbH v Bundesverband der Verbraucherzentralen und Verbraucherverbände – Verbraucherzentrale Bundesverband e.V.*[45] In this ruling, it was established that when a user opens the page of a website, he is not always aware of the fact that he may not only be dealing with cookies linked to the webpage he is visiting (the so-called first-party cookies) but also with other cookies stemming from websites that are partially displayed on the webpage the user is visiting (third-party cookies) and functioning in ways that are often detrimental to the user's right to privacy. Taking into account those circumstances, the Court of Justice of the EU referred to Art. 10 letter (c) Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data[46] as well as to Art. 13 (1) (a), (e) Regulation (EU) 2016/

[44]Hučková (n 35) 208.

[45]European Court of Justice. Case C-673/17 *Planet 49 GmbH v Bundesverband der Verbraucherzentralen und Verbraucherverbände – Verbraucherzentrale Bundesverband e.V.* [2019] [ECLI:EU:C:2019:801] <https://curia.europa.eu/juris/document/document.jsf;jsessionid=8A559119F4E25E512D8FCFBD7816E43D?text=&docid=218462&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=1661942> accessed 7 March 2021.

[46]Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data [1995] OJ L 281 <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:31995L0046&from=EN> accessed 9 March 2021.

679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data repealing Directive 95/46/EC which specify that "information on data recipients shall be provided by the controller to the user".[47] Informing the user of the existence of third-party cookies seems therefore a prerequisite for the user to grant his informed consent.

Another way for online businesses involved in personal data processing for personalized pricing purposes to avoid any risk of infringement of personal data and privacy law would consist in submitting themselves to a test including the following questions:

- is there a clear consent from data subject to the automatic processing of his personal data or should the processing be carried out on the basis of a contract? (*lawfulness of processing*)
- what is the legitimate interest in processing customer data? (*lawfulness, fairness and transparency principle*)
- for what purpose are the data processed? (*purpose limitation principle*)
- do I only process the data that I absolutely need? (*minimization principle*)
- am I processing correct and up-to-date data? (*principle of accuracy of personal data*)
- do I keep the data obtained only for the time necessary for processing? (*storage limitation principle*)
- do I have the technical means to ensure the protection of the data that I process in accordance with privacy by design and privacy by default? (*principle of integrity and confidentiality*)
- can I demonstrate that the processing of personal data is in accordance with the principles? (*principle of accountability*).

By complying with those principles, the controller, for instance an online company involved in personal data processing and profiling for personalized pricing purposes, may considerably lower his exposure to litigation risks. He should also bear in mind that those practises may not be allowed under EU law unless they meet a "legitimate interest" as specified in Art.6 par.1 (f) of the GDPR.[48] This can be done by observing a set of rules aiming to ensure transparency. According to those rules, the

[47]General Data Protection Regulation, art. 13 .
[48]See Zuiderveen Borgesius (n 13) 360.

controller must provide information "in concise, transparent, intelligible and easily accessible form, using clear and plain language" (Art.12 GDPR) regarding its identity and inform customers (data subjects) about the "purpose of the processing" (Art.13 and 14 GDPR). As for the data subject, he has the right to confirm whether his personal data can be processed and, if so, to know whether he can gain access to his personal data (Art.15). Despite these protective norms, a majority of consumers continue to behave recklessly towards the use of their personal data by online businesses. Most of them do not seem to care about them or be aware of the existence of options offered in programmes of many Information and Communication Technologies allowing consumers to indicate that they do not wish to share their personal data by clicking the incognito mode of an anonymous browser. This technical possibility doesn't mean that consumers remain completely "invisible" concerning their online activities from a technical standpoint but such an issue which relates to computer engineering, falls outside the reach of law.

Conclusion

The development of smart devices and advances in data-analytics enables online businesses to collect a growing range of personal data through the use of identifiers such IP or cookies. This trove of information can be used for personalized pricing, a form of price discrimination which consists in charging different prices for the same product or service on the basis of their personal characteristics and behaviour. Such practice has the potential to improve allocative efficiency by serving low-end consumers who would otherwise be underserved and by increasing the sales of companies. On the other hand, personalized pricing leads to a loss of welfare for high-end consumers who end up paying a higher percentage of their resources for the same product than in a uniform pricing system and to the transfer of all their consumer's surplus to manufactures and sellers. This is of a particular concern for the jurisdictions that tend to prioritize the protection of *consumer welfare*. If the competition rules of those countries contemplate exploitative abuses, as it is the case in the EU, then chances are high that competition authorities will prosecute personalized pricing as such. On the contrary, in jurisdictions such as the United States which apply total welfare standard and which only investigate exclusionary abuses, the probability that personalized pricing might be assessed as an abuse of dominant position is low. Another important issue raised by personalized pricing is the growing

erosion of privacy due to the greater ability of companies to collect information about internet users.[49] They can not only know their gender, age or level of education but also any data related to their online activity: the web pages they have visited, their geolocation, search queries or purchases on the internet. Most of the time the use of this information by online companies is at odds with personal data protection law. In the EU, the central piece of legislation regarding the protection of personal data is the General Data Protection Regulation (GDPR) whose aims is to ensure that the processing of personal data happens fairly, lawfully and transparently (Art.5, 1 (a) of the GDPR). Its application is triggered in the case of the processing of "personal data", defined as "any information relating to a natural person ('data subject') who can be identified by a party that processes personal data ('data controllers') through an online identifier" (Art.4 (1) GDPR) such as an IP address or a cookie. Since personalized pricing entails the processing of personal data of an identified or an identifiable natural person by the mean of an identifier, the GDPR applies to most if not all types of personalized pricing. Once the personal data is collected, the data subject remains most of the time uninformed about whether they will be processed, and if so, how and to what ends they will be used. In order to reduce the risks of infringement of privacy, any data controller such as an online company involved in personalized pricing, should bear in mind that such a practice may not be allowed under EU personal data protection law unless it meets a "legitimate interest" (Art. 6 (f) GDPR) and the controller observes a set of rules aiming to ensure transparency such as providing information about its identity and inform customers (data subjects) about the "purpose of the processing" (Art. 13 and 14 GDPR). As for the data subject, he should be able to give his consent to the processing of his personal data and receives a confirmation that he can access it (Art.15). By sticking to this set of rules, online businesses may considerably reduce their exposure to ligation risks for violation of personal data protection and privacy law.

Acknowledgments

The authors thank Regina Hučková, Vice-Rector of Pavol Jozef Šafárik University for Marketing and Public Relations and Associate Professor of Department of a commercial law and business law at Law faculty of Pavol Jozef Šafárik University for

[49]Turow (n 1) 108–110.

her review on the part of the article dedicated to the personal data protection law approach to personalized pricing.

The authors thank Gulnara F. Ruchkina, dean of the law faculty of the Financial University under the Government of the Russian Federation for her review of the section of the article dedicated to the competition law approach to personalized pricing.

The authors thank Patrick Antony Hutchinson for his review and invaluable input and Irina Rod for her contribution to the design of the figures.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

The section on personal data protection law was prepared in the framework of the research for the Grant Project APVV-17-0561 Human Rights and Ethical Aspects of Cyber Security and APVV–19–0424 Intra-corporate transformations, digital challenges and the rise of artificial intelligence. The Slovak Research and Development Agency.