

**RESPONSE OF THE COMPETITION LAW FORUM OF THE BRITISH INSTITUTE OF
INTERNATIONAL AND COMPARATIVE LAW TO CMA'S PAPER TITLED
"ALGORITHMS: HOW THEY CAN REDUCE COMPETITION AND HARM
CONSUMERS"**

1. This response is submitted by Competition Law Forum (the 'CLF') at the British Institute of International and Comparative Law in response to the Competition and Markets Authority's (the 'CMA') call for information ('CFI') on its paper titled "Algorithms: How they can reduce competition and harm consumers" (the 'CMA Paper') published on 19 January 2021.
2. This is a hugely important subject and the CLF would like to acknowledge the valuable work the CMA is conducting in the digital sector.
3. We welcome the opportunity to respond to the CMA Paper and the associated invitation to comment. We have not sought to comment on every point raised in the CMA Paper. Instead, we have structured our response with reference to the questions asked by the CMA in its CFI.
4. The CLF would be happy to engage with the CMA in any further discussions following our submission.

QUESTION 1: Are the potential harms set out in the review paper the right ones to focus on for our algorithms programme? Are there others that we have not covered that deserve attention?

5. The CMA has identified several examples of potential consumer harms in the CMA Paper. We agree with the CMA that "[a]lgorithms have enabled considerable gains in efficiency and effectiveness."¹ Algorithmic decision-making gives rise to significant consumer benefits. For example, consumers are often enabled access to the products they want at lower prices due to the work of algorithms that enable efficiencies, making those lower prices possible. The CMA Paper gives the example of "personalised pricing algorithms which lower search costs for consumers and bring about a more precise match between consumers and products and services", thereby increasing total output and consumer welfare.² Additionally, algorithms can work to empower consumers to more easily find products or services that interest them, and to compare those with competing offers. Algorithms can also facilitate inclusivity by identifying consumers as eligible for offers of which they otherwise may not have been aware. Therefore, it is important to acknowledge that the simple existence of an algorithm does not mean that there is potential for consumer harm.
6. In light of the consumer benefit and efficiencies delivered by the use of algorithmic

¹ See page 2.

² See paragraph 2.11.

decision-making, the CMA should be mindful, as in every area of its intervention, to be focussed on identifying areas of consumer harm, and intervening only where there is evidence of such harm. The CMA Paper cites instances of potential harm, rather than actual harm, and also assumes that market forces are unlikely to disrupt potential algorithmic harms.³ The CMA's approach should take account of sectoral analysis and evidence relating to the specific features of any given market segment where intervention is considered. To intervene in the use of algorithms without such evidence is to risk doing more harm than good to consumers.

QUESTION 2: Do you agree with how we have described each harm, and are there other examples that demonstrate them in addition to the examples we have included?

7. In relation to this question, we have considered the CMA's definitions of "algorithm" and "algorithmic systems". We appreciate the CMA's need to understand and assess algorithms accurately. It is important to ensure that the CMA uses up to date, relevant and reliable information to do this. However, the CMA Paper uses a broad interpretation of the concepts of "algorithm"⁴ and "algorithmic systems."⁵ In respect of algorithmic systems, the CMA explicitly acknowledges this. We are concerned that such wide definitions are overly inclusive, and could create uncertainty for businesses. In some areas, the CMA Paper conflates data-driven decision-making by humans with algorithmic decision-making. For example, the CMA Paper refers to "dark patterns" as falling within its definition of algorithms. However, "dark patterns" are an example of data-driven decision-making by humans. They are user interface design choices that are made by humans, based on an analysis of underlying data.
8. The approach of humans to making decisions based on relevant information is not new; it is the way that humans have always made decisions. The fact that there is generally an increasing amount of information available to all decision making humans does not necessitate a fundamental change in the way that the CMA regulates those decisions. If the CMA intends to develop regulatory techniques specific to algorithms, it must apply a precise definition of "algorithm", and specify its understanding of the relationship between algorithms and human decision-making.

³ See, for example, paragraphs 2.2, 2.6, and 4.3.

⁴ See paragraph 1.1: "*Sequences of instructions to perform a computation or solve a problem.*"

⁵ See paragraph 1.1: "*A convenient shorthand to refer more widely to automated systems, a larger intersection of the algorithm, data, models, processes, objectives, and how people interact and use these systems.*"

QUESTION 3: How likely and impactful are the identified harms now, and how might they evolve in the next few years?

9. In relation to this question, we have focused on the CMA Paper's discussion of algorithmic collusion.⁶ The notion of AI-powered algorithmic collusion that is not explicitly programmed by humans has been subject to little empirical research.⁷ Theoretical analysis can overlook market segment characteristics that make algorithmic collusion unlikely in the real world, for example, differentiated products and product lines, imperfect information, and varied pricing incentives of retailers. While theorists can construct scenarios in which collusive outcomes could be achieved by making very strict assumptions, very little evidence has been presented that AI-powered collusion is happening or is likely to occur in the future. Further work is required to assess the practical likelihood of collusion and possible harms, in a way that is supported by evidence.
10. Collusive agreements are made by humans and may be implemented and enforced using various tools and methods. The fact that algorithms have been used deliberately by humans as one of those tools does not make them inherently dangerous or anticompetitive in all circumstances. In areas where there is evidence of consumer harm, intervention should be focused on the underlying root causes of the harms, and not over-focused on the tool or methodology used to reach the harmful outcome, if that tool is not the root cause of the harms. The CMA should build a more precise understanding of the interaction between algorithms and human decision-making into any analytical framework. The framework should consider how algorithms could enable potential incremental harm beyond purely human decision-making. The CMA should differentiate those applications where an algorithm enables a certain harmful practice (i.e. the practice would be virtually non-existent without the algorithm), from those applications where algorithms only augment the human ability to make decisions, but do not themselves cause any harm or benefit.
11. Theories of harm based on economic theory and empirical evidence already exist for a wide range of issues, such as exclusionary practices and collusion. Many such theories of harm are covered in the CMA Paper. It is likely to be most impactful to understand how algorithmic considerations affect and interact with existing theories of harm and legal standards in the first instance.
12. Similarly, the existing methods of regulating competition are sufficiently flexible and far-reaching to provide the CMA and sectoral regulators with the tools necessary to combat collusion, regardless of whether the implementation of that collusion involves the use of algorithms by the firms involved. As the CMA Paper acknowledges, it was able to find collusion in the "Online sales of posters and frames" case that took place between Trod Ltd and GB eye Ltd as the two parties made an agreement not to undercut

⁶ See paragraph 2.3.

⁷ Assad, S, Clark, R, Ershov, D, & Xu, L (2020), 'Algorithmic Pricing and Competition: Empirical Evidence from the German Retail Gasoline Market, CESifo Working Paper, No. 8521., referenced by the CMA at para 2.88.

each other's prices for certain products.⁸ Trod Ltd and GB eye Ltd used a pricing algorithm to monitor and enable enforcement of the cartel, but the two companies, not the algorithm, caused the collusion.

QUESTION 4: Are there specific examples that we should investigate further to consider whether they are particularly harmful and potentially breaching consumer or competition law?

13. While we do not have further examples to share, one additional consideration the CMA may take into account when investigating potential harms, is the appropriate threshold for such potential harms. To avoid intervention where it is not necessary (or may even be duplicative or harmful), it would be prudent to establish a defined threshold of harm for the regulation of algorithmic decision-making, and the CMA's interventions in such decision-making.
14. This would be consistent with the approach in other areas where algorithmic decision-making is already regulated, and a minimum threshold must be met for intervention. For example, Regulation (EU) 2016/679 (the General Data Protection Regulation - GDPR), adopted into UK law following the end of the Brexit transition period on 1 January 2021 as the UK GDPR, already regulates automated decision-making, setting out principles of fairness, accountability and transparency in relation to the use of personal data for such decision-making. Article 22(1)⁹ of that regulation also sets out the threshold, in the context of data protection, that an automated decision must have a legal effect or other significant negative impact on an individual to be caught by the provision. A specific threshold for competition and consumer harm (which may differ from the established GDPR threshold) would create greater certainty and avoid unnecessary, harmful or duplicative intervention.

⁸ [CMA 50223: Online sales of posters and frames](#), 4 December 2015

⁹ "The data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her."

QUESTION 5: Are there any examples of techniques that we should be aware of or that we should consider beyond those that we've outlined?

15. We set out several practical considerations which should be taken into account when interrogating algorithms. In particular, the CMA Paper assumes that firms "produce a final, 'trained' algorithm."¹⁰ This assumption should be qualified. Algorithms in reality are dynamic, changing and developing over time. Often, it would not be possible to provide a static version of an algorithm without that version quickly becoming inaccurate and out of date, and therefore potentially misleading.
16. Further, any underlying algorithmic code is potentially misleading without the contextual data. Algorithms run on data inputs, including some that originate with humans. Without the relevant data inputs the underlying code is likely to be uninformative. Code and data often exist in an ecosystem, which means that "separation" either is technically infeasible or would result in non-meaningful results. If simulated data inputs are applied to the underlying code, the algorithm is bound to provide an inaccurate and potentially misleading picture of the way it actually functions in practice, unless failsafe steps are taken to ensure that any simulated data inputs are accurate or representative of the real-life underlying data.
17. Any analysis of algorithms also needs to be carried out in a way that distinguishes the algorithm from the human component of decision-making. When collecting observational data, it can be difficult to delineate causality, and in algorithmic settings it may be near impossible to identify what aspects of a certain practice are attributable to algorithms or human decision making.
18. These issues present a risk of misunderstanding and mischaracterisation of the way that algorithms actually work. In addition, there are various issues associated with compelling firms to provide the code underlying algorithmic decision making. In many cases, such a requirement is likely to be disproportionate, given the magnitude and complexity of the technical burden, and commercial risk to businesses of providing such information. A firm's proprietary algorithmic code is likely to constitute a trade secret, the product of significant research and development resource, and may be essential to a firm's continued competitiveness. The commercial risk to firms of providing underlying code is heightened by the likelihood of that information being misunderstood for the reasons given above. Broader requirements for transparency of algorithms or their underlying logic could lead to those algorithms being gamed, which can drive negative outcomes for consumers.

¹⁰ See paragraph 3.12.

QUESTION 6: Are there other examples where competition or consumer agencies have interrogated algorithms that we have not included?

19. In light of the factors set out in paragraphs 13 to 16, different investigative techniques will be appropriate depending on the specific circumstances. A complex handover of code and data will not always be proportionate or necessary, or an effective way to evidence harm. Regulatory authorities are not better placed than businesses to determine the optimal algorithmic logic for customers, and bespoke solutions may be necessary to strike the balance in particular cases. The CMA should consider working together with businesses to develop an appropriate investigative toolbox to allow for targeted, low-cost and effective collaboration when analysing algorithmic decision making. One example of these techniques in action is the Regulatory Sandbox run by the UK Information Commissioner's Office ('ICO'), which allows organisations to collaborate with the ICO and draw on the ICO's privacy expertise when creating new products and services.¹¹

QUESTION 7: Is the role of regulators in addressing the harms we set out in the paper feasible, effective and proportionate?

20. The CMA should not adopt a "one size fits all" approach to the topic of algorithms. The CMA itself has recognised the advantages of a case by case analysis under *ex post* competition rules, rather than a "one size fits all" regulation: "a case by case, evidence-based approach benefits the assessment of some of the more challenging elements of competition analysis in digital markets."¹² The CMA's approach should take account of the specific features of any given market segment. Each market segment should be examined in its own right to determine whether it suffers from competition issues as a result of the use of algorithmic decision making.
21. Whether any remedial measures with respect to the use of algorithms in that particular market segment are necessary and appropriate should be determined in the context of the specific features of that market segment. For example, not all integrated companies have incentives to self-preference, and the market segment and business model should be carefully analysed before intervention can be justified. To make broad decisions on algorithmic decision making across market segments without investigation of their varying features is likely to result in unjustifiable interventions.
22. As recognised by the CMA, "intervention designed to address a problem in a market can impose higher costs than the problem it was designed to address."¹³ In general, greater regulation is – on average – associated with less competition and lower levels

¹¹ Information Commissioner's Office, 'The Guide to the Sandbox', available at <https://ico.org.uk/for-organisations/regulatory-sandbox/the-guide-to-the-sandbox/>

¹² Common Understanding of G7 Competition Authorities on "Competition and the Digital Economy" (Paris, 5 June 2019) at page 6. Available at: https://www.autoritedelaconcurrence.fr/sites/default/files/2019-07/g7_common_understanding.pdf

¹³ [CMA111: Regulation and Competition, A Review of the Evidence](#), January 2020, paragraph 3.11.

of regulation tend to be observed alongside higher rates of productivity and economic growth.¹⁴ Regulation can have a negative impact on competition through a reduction in the number of suppliers, and limitation of the incentive and ability of firms to compete, which in turn leads to lower levels of innovation and productivity. Compliance or administrative costs can have the effect of making entry to a market segment more difficult or less attractive, thereby stifling competition.¹⁵

23. Regulation can also lead to a misallocation of resources. As acknowledged by the CMA, regulation can stifle innovation through the deterrence of disruptive technologies or business models.¹⁶ In particular, firms can suffer due to the cost of complying with regulation, which can reduce the funds available for research and development. High compliance costs do not only reduce the incentive to enter a market, they can also divert resources away from research, making innovation less likely for those firms that are already in a market and having to comply with regulation.¹⁷ Research shows that regulation, which imposes a compliance burden stifled innovation while regulation that reduced the burden of compliance incentivised innovation.¹⁸
24. In any event, there is no demonstrable need for the creation of a new system to deal with firms' use of algorithms. The existing competition rules are sufficiently flexible and far-reaching to provide the CMA and sectoral regulators with the tools necessary to ensure that markets are competitive. This is the case for the CMA's regulation of anticompetitive agreements whether or not players are utilising algorithms to implement those agreements.

QUESTION 8: Are there other ideas or approaches that we should consider as part of our role?

25. It is important that the CMA regulates anticompetitive behaviour and is careful not to impede novel ways of doing business that, despite being unfamiliar, have not actually or potentially presented harm to consumers. The CMA Paper suggests a suspicion of algorithms in general, not taking into account their various, diverse, and often pro-competitive uses and without being founded in relevant evidence of real consumer harm.
26. We would urge the CMA to ensure it adopts an evidence-based approach to regulation

¹⁴ [CMA111: Regulation and Competition, A Review of the Evidence](#), January 2020, paragraphs 1.11 and 4.4.

¹⁵ This has also been recognised by the G7 Competition Authorities (which include the CMA): "*Regulations also can harm competition by increasing the cost of entry and entrenching incumbents.*" See Common Understanding of G7 Competition Authorities on "Competition and the Digital Economy" (Paris, 5 June 2019) at page 7. Available at: https://www.autoritedelaconurrence.fr/sites/default/files/2019-07/g7_common_understanding.pdf

¹⁶ [CMA111: Regulation and Competition, A Review of the Evidence](#), January 2020, paragraph 4.39.

¹⁷ [CMA111: Regulation and Competition, A Review of the Evidence](#), January 2020, paragraph 4.40.

¹⁸ Kramer, F., & Wrightson, J. (2016). "Innovation, leadership and national security" (pp. 17-30, Rep., Ch 5). Atlantic Council, referenced by [CMA111](#) at paragraph 4.40.

in all areas, including where players make use of algorithms in their business. If the CMA is to treat algorithmic decision making differently, it should do so based on evidence specific to the relevant market segment. The CMA's approach should be specific to harm to consumers in the UK and should be based on a substantial body of evidence from sources that are relevant, reliable, and specific to the particular market segment in question.