



BCS response- Algorithms, Competition and Consumer Harm: Call for Information

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¹ OBE for services to Computing and to Artificial Intelligence Education, awarded December 2019.
<https://www.thegazette.co.uk/notice/3454966>

Executive Summary

This document is the BCS response to the CMA open call for information² on ‘Algorithms, Competition and Consumer Harm’. We welcome this very thorough and in depth analysis of possible harms and the role of regulators in addressing those harms. BCS as the UK’s Chartered Institute for Information Technology welcomes the CMA invitation for potential collaboration on their algorithms programme, and most definitely would be willing to collaborate.

Our main observations are:

Nolan Principles: Where there is potential for significant systemic consumer harm through the use of algorithms firms must abide by the same standards that the public sector have to meet, which includes adhering to the Nolan principles of openness, accountability and objectivity, as recommended by the Committee for Standards in Public Life³ in their work on algorithms in public life. That is fundamental to the success of any mitigation or remedies that rely on technical solutions. CMA should prioritise how through its role as regulator it can ensure the private sector abides by those principles.

Algorithm Governance: The fundamental causes of harms resulting from the use of algorithms are either due to poor practice (e.g. through the lack of rigorously assessing the unintended consequences of automated decisions on vulnerable people) or unethical behaviour (e.g. through intentionally using algorithms to maximise information asymmetry between firms and consumers to unfairly distort markets). Those causes are most effectively addressed through ensuring firms adopt high standards of algorithm governance that continuously improve competency, ethical behaviours and accountability around the development, adoption, use and management of algorithms. CMA should prioritise how through its role as regulator firms are encouraged to adopt high standards of governance of algorithms, in addition to proactively identifying harms through technical means.

Public Trust: The National Data Strategy⁴ points out that the success of digital and data technologies has to be underpinned by public trust, and conversely public mistrust will overshadow any benefits those technologies will have. The same is true in the private sector. One of the most effective mechanisms for building public trust is to ensure those professionals developing, adopting, using or managing algorithms in the private sector are required to be professionally competent, adhere to high standards of ethical behaviour and to be accountable to appropriate authorities for their professional practice. In our view CMA, as well as considering mitigation of harms to consumers, should also partner with those attempting to build public trust in the use of algorithms in the private sector, such as professional bodies (including professional bodies for accountancy, management, finance, HR, banking and digital technologies, for example).

² <https://www.gov.uk/government/consultations/algorithms-competition-and-consumer-harm-call-for-information>

³ <https://cspl.blog.gov.uk/2020/08/19/decision-making-by-algorithm-must-meet-nolans-tests/>

⁴ <https://www.gov.uk/government/publications/uk-national-data-strategy/national-data-strategy>

Technical Comments: The UK Computing Research Committee⁵, which is an expert panel of BCS and the IET and whose members are internationally leading computing researchers drawn from both academia and industry, have provided CMA detailed comments about the technical aspects of the CMA paper⁶. With one exception we will not further elaborate on those in this response, which instead focuses on topics in the consultation that are relevant to professionalism. The one additional point we make here beyond the UKCRC response is that in practice CMA is at best going to be able to detect correlations between the way algorithms are used and possible harms this causes. Care must be taken not to confuse correlation and causation, which means it will be very important to understand the context in which potential harms are identified and remedies applied.

Response to Consultation Question 1

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?’

The set of specific harms to individuals and market distortion laid out in the paper are comprehensive. However, in our view those harms are mostly those that CMA can address with the legal tools that it currently has at its disposal, whereas **the most corrosive and enduring harm** to future economic growth and prosperity would be the loss of public trust in the private sector to use algorithms in ways that are beneficial. As we mentioned in the executive summary this point is well recognised with regards to the public sector in the National Data Strategy, and applies equally to the private sector.

In late 2020 BCS commissioned YouGov to conduct a survey of public opinion into the use of algorithms to make decisions that make judgements about people:

- A majority of people in the UK⁷ have no faith in any organisation to use artificial intelligence and algorithms to make judgements about them, in issues ranging from education to welfare decisions.
- A larger majority⁸ also tell us that IT professionals should be Chartered in the same way as accountants.
- Most people (59%) also believe that the profession should be kept focused on solving society’s problems by an independent regulatory style of body⁹

⁵ <https://www.theiet.org/impact-society/thought-leadership/expert-panels/uk-computing-research-committee-ukcrc/>

⁶ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/954331/Algorithms_++.pdf

⁷ YouGov survey, commissioned by BCS; 53% of UK adults said they did not trust any organisation to use algorithms in making judgments about them.

⁸ YouGov survey, commissioned by BCS; 63% of UK adults agree that computer programmers working on software which impacts on people’s lives should hold Chartered status, as is generally expected in the case of Chartered Accountants.

⁹ YouGov Survey, commissioned by BCS; 59% believe it should be an independent regulator keeping the profession focussed on society’s problems – only 22% said the task should fall to politicians.

The later point shows that the public want regulators to do more than mitigate against harms caused by bad practice, they want regulators to incentivise firms to develop technology that solves societies problems.

Response to Consultation Question 2

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?’

In looking at the possible harms the review has very comprehensively considered how commercial activity automated through algorithms could cause consumer harm or unfairly distort markets.

Commercial companies are more and more commissioned to provide public services, or the services they do provide are more and more overlapping with the public sector (e.g. Babylon healthcare¹⁰ is an example of the private sector disrupting the public sector through the use of algorithms to augment traditionally manually delivered public health services). All of which means in addition to considering types of possible harms it is important to consider the context in which they can occur, which includes, for example, areas such as voter microtargeting, student exam moderation, border control, criminal justice, recruitment, social benefits allocation, and scarce resource allocation in primary healthcare.

It is also worth noting that the descriptions of particular algorithmic behaviours as a ‘harm’ can on occasion be misleading. For example, the review considers an example of personalisation where a consumer on an ecommerce platform is shown more expensive items at the top of a search query because on previous visits they bought expensive items. That may be a ‘harm’ or it may be appropriate because the consumer intentionally chooses items that are of a higher quality, which almost always means they are of a higher cost. E.g. a consumer looking for a new laptop may consciously want one with a higher quality screen, hard-drive, battery and overall build quality in which case they are more interested in laptops that are more expensive.

That means it is important to unpick with care when personalisation or the other described ‘harms’ cause actual harm rather than have characteristics that *correlate* with possible harmful behaviour.

Response to Consultation Question 3

Question 3; ‘How likely and impactful are the identified harms now, and how might they evolve in the next few years?’

Artificial intelligence (AI), machine learning, and the Internet of Things are very much in their infancy and predicting how they will impact on markets and society is extremely difficult, as history has shown us with the way the Internet has evolved since its inception.

What is very worth noting is the extraordinary resources being devoted by the private sector to develop AI technologies with the intention of completely modelling the individual

¹⁰ <https://www.wired.co.uk/article/babylon-health-nhs>

desires and needs of every single human connected to the internet, so that firms can understand, anticipate and influence what each of us wants or needs based on real time data provided by numerous online services that we interact with.

Of course, being able to understand what each of us needs and wants does not have to imply all algorithmic based services will be harmful. Quite the opposite will be true if firms are competent, ethical and accountable for how they develop, adopt, manage and use algorithms, in which case the benefits to society should be transformational.

Response to Consultation Question 4

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?'

Yes: the review comprehensively looks at how algorithms may directly affect consumer choice, but does not look at how algorithms are used to manage B2B competition within supply chains. Increasingly large corporations will use algorithms to automate the management of commissioning, procurement and contractual implementation of services within their supply chain by third parties. Algorithms could lead to harms in these situations where they unfairly discriminate either for or against certain types of third party suppliers.

Also please refer to our answer to question 2 above, which is also relevant to this question.

Response to Consultation Question 5

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?'

The review looks at a comprehensive set of techniques for examining what an algorithm might output, or how it behaves with relation to the possible harms identified in the paper. In our view, harms result from poor practice or unethical behaviour. Hence, a risk based assessment of whether a firm is likely to be causing actual harm through the use of algorithms would consider the professional maturity of software engineering practices within the firm, the effectiveness of algorithm governance in the firm, and whether the day to day values evidenced by the firm reflect the Nolan principles of openness, accountability and objectivity.

One of the potential tools CMA is considering is testability of algorithm behaviour through standardised APIs. There is an extensive body of knowledge from the telecommunications industry and the computer networking industry on the challenges of conformance testing of APIs that highlight the complexities of such an approach, but will also point towards good practice that could easily be adapted for use in detecting harmful behaviours.

High standards of professional practice within a firm are one of the best guarantors that the algorithms they develop, adopt, use or manage will be amenable to proper scrutiny. In our view CMA should be collaborating with those organisations that can advance such professional practice.

Response to Consultation Question 6

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

CMA should be aware of the unethical practices in financial services targeting vulnerable consumers and the use of algorithms in such practice. In March 2019, the Financial Ombudsman Service (FOS) reported 388,392 complaints over the previous 12 months across the financial sector. Including 40,000 complaints against payday loan companies, which is a five year high and a rise of 14% on the previous year. Many such payday loan companies operate online and use algorithms to determine whether a loan will awarded and what amount of loan will be provided. The FOS reported that it found in favour of nearly three quarters of those complaints¹¹. Algorithm regulation has the potential to enhance the efficiency and effectiveness of organisations such as the FOS to deal with and even prevent such abuses. CMA should consider engaging with the FOS.

As we mentioned in the Executive Summary, there are other government departments such as DCMS, including the Office for Artificial Intelligence, and the Cabinet Office who are investigating responsible use of data driven information systems as part of the National Data Strategy, which it would be very worthwhile CMA collaborating with. Also, the Office for Statistical Regulation has recently published recommendations¹² for development of algorithms in the public sector, and it would be worthwhile CMA connecting with them.

Response to Consultation Question 7

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

As mentioned in the Executive Summary, the Committee on Standards in Public Life (CSPL) have highlighted that where automated information systems are intended to provide public benefit they have to meet the same standards that people in public office have to meet, which especially includes adhering to the principles of **openness, accountability and objectivity**.

BCS showed in our policy paper¹³ ‘The Exam Question: How Do We Make Algorithms Do The Right Thing?’ it is feasible to apply those principles to real world, complex examples of the design and development of algorithms if they are properly interpreted through the lens of professional practice.

Given their importance and the fact they can be made to work in the context of algorithm design and development, CMA should consider how its role as regulator can support and encourage firms to adopt those principles at the core of their algorithm design and development.

¹¹ <https://www.financial-ombudsman.org.uk/files/2876/issue109.pdf>

¹² <https://osr.statisticsauthority.gov.uk/publication/ensuring-statistical-models-command-public-confidence/>

¹³ <https://www.bcs.org/media/6135/algorithms-report-2020.pdf>

Response to Consultation Question 8

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

Please see our response to question 1, where we explain that loss of public trust in the use of algorithms is possibly one of the greatest harms that could occur. In our view that means CMA should be collaborating with all those stakeholders who are concerned with ensuring algorithms are designed, used and managed by professionals who uphold high standards of competency, ethical values and accountability. For example, the relevant professional bodies including BCS but also others such as the IET, the Royal Statistical Society, CIPD, the Chartered Banker Institute, the Chartered Accountancy Institutes, and the Chartered Management Institute, amongst others.

Who we are - BCS, The Chartered Institute for IT

BCS is the UK's Chartered Institute for IT. The purpose of BCS as defined by its Royal Charter is to promote and advance the education and practice of computing for the benefit of the public.

We bring together industry, academics, practitioners and government to share knowledge, promote new thinking, inform the design of new curricula, shape public policy and inform the public.

As the professional membership and accreditation body for IT, we serve over 60,000 members including practitioners, businesses, academics and students, in the UK and internationally.

We also accredit the computing degree courses in ninety eight universities around the UK. As a leading IT qualification body, we offer a range of widely recognised professional and end-user qualifications.

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