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Artificial Intelligence, Algorithms and Antitrust

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This is a brief summary of the key themes discussed by Professor Suzanne Rab of Serle Court Chambers at the 8 October 2019 Competition Law Association seminar and panel session: "Artificial Intelligence, Algorithms and Antitrust".

The debate around artificial intelligence or "AI" has attracted antitrust interest among academics, practitioners and regulators alike. In their book, *Virtual Competition* Professors Ariel Ezrachi and Maurice Stucke postulate the "end of competition as we know it" and call for heightened regulatory intervention against algorithmic systems.

The AI antitrust literature reflects three broad themes or potential areas of antitrust concern which invite examination. First, it is said that AI can widen the set of circumstances in which known forms of anticompetitive conduct, and particularly conscious parallelism or tacit collusion, can occur. Second, it is said that use of algorithms will bring newer forms of anti-competitive conduct which challenge traditional antitrust orthodoxy with new (non-price) elements including price discrimination, co-opetition, data extraction and data capture. Third, it is said that deception and exploitation are features of algorithmic markets which nudge consumers to engage in unfair transactions with which conventional antitrust regimes are not best equipped to deal.

I will address the claimed facilitating role of algorithms and whether they may contribute or lead to anti-competitive outcomes. I consider (1) whether AI leads to anti-competitive outcomes or other concerns, (2) whether there might be another (not anti-competitive) outcome, and (3) views from the regulators on attribution of liability for AI decisions. I link these issues to the wider debate about the appropriate role for antitrust enforcement in the digital age.

The main concern in the context of antitrust or competition law is that a specific type of AI – pricing algorithms used by firms to monitor, recommend, or set prices – can lead to collusive outcomes in the market in two main ways. Firstly, pricing algorithms may help facilitate explicit coordination agreements among firms. This is because the use of algorithms may make market conditions more suitable for coordination. For example, monitoring prices of other firms could be easier when algorithms are deployed. Secondly, under certain conditions, the use of pricing algorithms can lead to tacit collusion even without agreement to coordinate. This concern is founded on the principle that when many or all firms in the

market use some similar and simple algorithms to set prices, their strategies can be anticipated by each other, making it easier to reach coordinated outcomes.

Mehra has focused on the facilitating role of algorithms stating that: "…to the extent that the effects of oligopoly fall through cracks of antitrust law, the advent of the robo-seller may widen those cracks into chasms. For several reasons, the robo-seller should increase the power of oligopolists to charge supracompetitive prices: the increased accuracy in detecting changes in price, greater speed in pricing response, and reduced irrationality in discount rates all should make the robo-seller a more skilful oligopolist than its human counterpart in competitive intelligence and sales…the robo-seller should also enhance the ability of oligopolists to create durable cartels" (Mehra, S. K. (2006) Antitrust and the Robo-Seller: Competition in the Time of Algorithms, 100 Minnesota Law Review, 1323-75.)

This suggests that algorithms can be a 'plus factor' which renders tacit collusion more likely, stable, durable and versatile by facilitating detection and retaliation at lower levels of concentration than previously understood. However, this claim is not straightforward. Firms would still need to choose whether to use and stick to the same algorithms. The incentive to coordinate is not automatic just because of the existence of algorithms. Firms could still choose to undercut rivals for short term gain. Indeed, smart algorithms might try to cheat without being caught.

Another area of antitrust interest relates to the use of AI in facilitating vertical restrictions of competition. For example, on 1 August 2019 the UK Competition and Markets Authority (CMA) fined Casio £3.7 million for infringing competition law by preventing online discounting for its digital pianos and keyboards. The CMA found that Casio used new software that makes it easier to monitor online prices in real time and ensure compliance with its pricing policy. It also found that this meant that individual retailers had less incentive to discount for fear of being caught and potentially penalised.

Contrary to the claims that AI is likely to lead to anti-competitive outcomes, AI in general generates a wide range of efficiencies. For example, AI can be used to predict demand using past data and help firms to improve inventory management. In some areas, AI may be effective in replacing human labour for repetitive and simple tasks. Due to these efficiencies, the use of AI may have impacts on the demand for labour. More computer scientists may be required to improve the performance of algorithms, while the number of manufacturing jobs may decrease as more tasks can be performed by machines. This is one example of increase in demand for goods and services complementary to the use of AI (e.g. computing),

and decrease in demand for goods and services that can be substituted by AI (e.g. bricks and mortar travel agents).

On the question of whether EU competition law is fit-for-purpose in an AI environment, there is no consensus among regulators internationally. European Competition Commissioner Margrethe Vestager has stated that: "…businesses also need to know that when they decide to use an automated system, they will be held responsible for what it does. So, they had better know how that system works" (Bundeskartellamt 18th Conference on Competition, Berlin, 16 March 2017). In terms of attribution of liability, the Commission treats an AI decision-maker in the same way as a human and the business cannot escape liability by attributing conduct to a machine. It appears that the Commission expects businesses to anticipate the possibility of a recalcitrant AI decision-maker and they must take steps to limit its freedom by design.

It is clear that the digital sector remains at the forefront of the Commission's policy agenda. In April 2019 the Commission published a report entitled "Competition Policy for the digital era". The report makes interesting reading against the pending EU antitrust investigation into Amazon's treatment of merchant data. The report identifies three key features of the digital economy: extreme returns relative to scale, network externalities, and the role of data. The writers believe that the basic competition law framework under Article 101/102 of the Treaty on the Functioning of the EU provides a sound basis for protecting competition in the digital economy. However, they note that the features of platforms, digital ecosystems and the data economy may need to be adapted when looking at market power and defining relevant markets.

Further, in an unprecedented move in 2019, Vestager has been appointed as both EU Commissioner for Competition and Executive Vice-President responsible for co-ordinating the Commission's agenda on a Europe fit for the digital age. Vestager's re-appointment to the role of Commissioner for Competition is an exceptional vote of confidence in her abilities and has been welcomed by the competition bars in Europe and the UK. In her first term of office, she can be credited for promoting greater awareness of competition issues, many making headline news including in high profile cases such as *Google Shopping*. The change of Competition Commissioner does not usually signal a dramatic shift in focus for DG Competition. If anything, Vestager's re-appointment to the role means that those operating in the digital sector can expect continued scrutiny.

From a UK antitrust perspective, when considering the implications of AI for liability the UK's former CMA Chairman David Currie has questioned whether the legal tools currently available to the CMA are capable of tackling all the challenges presented by the rise of the algorithmic economy, such as self-learning algorithms. This may suggest that the question of attribution of liability (under the UK competition regime at least) is ripe for reassessment

should developments in AI advance to such a state where humans cannot properly be held liable for what a machine does.

On the specific issue of whether algorithms may facilitate anti-competitive outcomes, the CMA adopts a nuanced view. It has, for example, published an economic research paper on the role of pricing algorithms in online markets (Pricing algorithms, Economic working paper on the use of algorithms to facilitate collusion and personalised pricing, 8 October 2018 (CMA94)). The CMA finds that algorithms can be used to help implement illegal price fixing and, under certain circumstances, could encourage the formation of cartels. However, the risk of algorithms colluding without human involvement is currently less clear.

The AI antitrust scholarship makes a bold claim that AI is an enabler of tacit collusion and could increase the scope for anti-competitive outcomes at even lower levels of concentration than traditionally associated with antitrust theory. However, a closer examination of these claims reveals alternative hypotheses which need to be fully tested before the theory can be incorporated in policy and legal environments without running the risk of being counterproductive.

A technological understanding of algorithms and how they operate is critical. For now, at least, it seems that the antitrust authorities will typically be able to find evidence of human involvement where machines or algorithms are identified as facilitators of anti-competitive conduct. However, the fact remains that technology will probably evolve to such a point where this situation does not always hold true. Ultimately enforcers, practitioners and businesses will have to confront the question of liability for the decisions or output of machine learning which is increasingly distanced from human intervention.

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