

## RETHINKING THE CONTOURS OF COMPETITION LAW: *THE AI PERSPECTIVE*

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*“AI is a new digital frontier that will have a profound impact on the world.”*

- *WIPO Director General Francis Gurry*

### ABSTRACT

India’s legislative and policy development for regulating the competition in market is still at its nascent stage. Though, the Competition Act, 2002 (“Act”) has faced serious challenges in its implementation, it has been able to adequately address concerns relating to Indian demographics. However, the convergence between competition law and technology has exposed serious lacunas in the law. The data giants like Google and Amazon have made serious attempts to cause peril to the fair competitive practices by piercing the competition law and regulations of India. Technological advancement has brought the Artificial Intelligence (AI) systems in operation at the market places. AI has shown the potential to disrupt the market and also the ability to subvert the fundamental balance between the competition law and its enforcement. Technology not only provides the ease of convenience to the consumers but also jeopardizes their interest by inducing the market forces and consequentially affecting the competition in the market. The author endeavours to examine the potential effect of AI in the market and analyzes the existing trends in the market sphere. The paper finally concludes after analyzing the perils, their consequences and a prospective roadmap to tackle the challenges posed by AI.

**Keywords:** Data, Artificial Intelligence (AI), Competition, Competition Law and market forces.

### *Why do humans rely on artificial intelligence?*

An ordinary pursuit in the business activities mandates huge amount of skill and effort by humans, however the advent of AI has enabled humans to change this mandate. AI brings forth improved accuracy along with risk reduction. AI is capable of providing impenetrable and inaccessible volumes of accurate data and allows a professional to take decisions through AI systems. This means that the business portfolios may be dictated through decisions which are actually generated by Artificial Intelligence Systems.

#### **I. ARTIFICIAL INTELLIGENCE: IDENTIFYING FUTURE POSSIBILITIES THROUGH THE ARTIFICIAL FUEL.**

AI, introduced as a concept in a 1950 paper, got its name during the Dartmouth Conference in 1956.<sup>1</sup> However, there exists no single unanimous definition of AI. Some define it broadly as a computerized system exhibiting behaviour commonly thought of as requiring intelligence, whereas others call it a system that is capable of rationally solving complex problems or taking appropriate action to achieve its goals in real-world circumstances.<sup>2</sup>

AI systems have garnered significant appreciation from international community and even by WIPO (World Intellectual Property Organization).<sup>3</sup> In fact countries like Australia and Canada have initiated AI systems in their Patent offices to help them conduct semantic

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<sup>1</sup> NETWORKING AND INFORMATION TECHNOLOGY RESEARCH AND DEVELOPMENT SUBCOMMITTEE, NATIONAL SCIENCE AND TECHNOLOGY COUNCIL, THE NATIONAL ARTIFICIAL INTELLIGENCE RESEARCH AND DEVELOPMENT STRATEGIC PLAN (2016), *available at* [https://www.nitrd.gov/pubs/national\\_ai\\_rd\\_strategic\\_plan.pdf](https://www.nitrd.gov/pubs/national_ai_rd_strategic_plan.pdf).

<sup>2</sup> *Id* at 7.

<sup>3</sup> Press Release, WIPO, WIPO Translate: Republic of Korea is First to Adopt WIPO's "Artificial Intelligence" – Powered Patent Translation Tool, WIPO Press Release PR/2018/818 (May 24, 2018).

searches and to collect, scrub, and analyze large datasets.<sup>4</sup> Artificial intelligence has rived the entire technology ecosystem and has opened avenues which were considered unimaginable. This is evident from the ongoing R&D for the implementation of AI on a macro level.<sup>5</sup>

DeepMind, a leading artificial intelligence (AI) research company, has filed a series of international patent applications concerning a sundry of the elementary aspects of modern-day machine learning. These certainly are of great potential significance to stakeholders operating in the commercial AI sphere.<sup>6</sup> Instances of these kinds including technological advancement have shown us the pervasive existence of artificial intelligence in the commercial community. AI systems have also started to influence the competitive market owing to their inherent ability to subvert the fundamental balance between independent market forces.<sup>7</sup>

## **II. THE WISDOM BEHIND THE COMPETITION ACT, 2002.**

Perusing the Preamble and statement of objects and reasons of the Act, a conclusion can be drawn that the principle objects of the Act are to eliminate practices which may adversely affect the competition, to promote and nourish competition in the market, to protect the interest of the consumers and effectively ensure freedom of trade carried on by various participants in the market, in view of the economic developments in the country. In essence, the letter of law does not only mandate the protection of free trade but holds the protection of consumer interest at the highest pedestal.

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<sup>4</sup> Index of AI initiatives in IP offices (2018), available at [https://www.wipo.int/about-ip/en/artificial\\_intelligence/search.jsp](https://www.wipo.int/about-ip/en/artificial_intelligence/search.jsp).

<sup>5</sup> TT Consultants, *Can Artificial Intelligence software be patented in India?*, PATENT BLOG AND PATENT NEWS FOR LEGAL SERVICES, available at <http://ttconsultants.com/blog/can-artificial-intelligence-software-be-patented-in-india/>.

<sup>6</sup> Rose Hughes, *DeepMind: First major AI patent filings revealed*, THE IPKAT, available at <http://ipkitten.blogspot.com/2018/06/deepmind-first-major-ai-patent-filings.html>.

<sup>7</sup> Neha Soni et al., *Artificial Intelligence in Businesses: from Research and Innovation to Market Deployment*, 167 *PROCEDIA COMPUTER SCI.* 2200, available at <https://www.sciencedirect.com/science/article/pii/S1877050920307389>.

In fact, efforts to liberalise the Indian economy to match the standards set by the best of the economies of this century would be jeopardised if a time-bound schedule and expeditious disposal by the Commission is not followed.<sup>8</sup> As a necessary corollary a lack of clarity relating to concepts which are not dealt within the Act will lead to precarious and undesirable situations of delay in disposal of cases. The contours of the Act do not envision a market influence through AI and therefore a speedy disposal of cases may not be possible.

In fact, the purpose of the Act is not only to illuminate practices having adverse effect on the competition but also to promote and sustain competition in the market. Axiomatically, effective enforcement is important not only to sanction anti-competitive conduct but also to deter further anti- competitive practices. It is the imperative duty of the CCI to ensure that the conditions which have tendencies to kill the fair competition in the market are to be curbed. The CCI must ensure that consequential benefits of a healthy competition are reaped by the consumers.<sup>9</sup> Therefore, the CCI must address the competition concerns raised through technological developments specifically AI's ability to influence and to predict the demand and supply. AI has the ability to suggest conduct of pre-determined nature which may invariably affect the competitive spirit of the market.<sup>10</sup>

Addressing AI's influence in the current scenario, it will be desirable that the competent authority frames regulations providing a definite time-frame for completion of investigation, inquiry and final disposal of the matters pending before the Commission.<sup>11</sup> Until specific regulations are framed for AI, the court must indulge them in finding solutions to curb the anti-competitive conduct through machine learning and AI mechanisms. Since companies are predominantly encouraged for the formation of a cartel, it is the duty of the

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<sup>8</sup> CCI v. SAIL, (2010) 10 SCC 744 (India), ¶ 125.

<sup>9</sup> Rajasthan Cylinders and Containers Limited v. Union of India, (2018) SCC OnLine SC 1718 (India), ¶ 79.

<sup>10</sup> OECD, *Algorithms and Collusion: Competition Policy in the Digital Age* (2017), available at <http://www.oecd.org/daf/competition/Algorithms-and-collusion-competition-policy-in-the-digital-age.pdf>.

<sup>11</sup> CCI v. SAIL, (2010) 10 SCC 744 (India), ¶ 136.

state to prevent the formation of cartel and prevent any price escalation. The consumers should not be susceptible to unwarranted consequences of the competition malpractices.<sup>12</sup> AI technology is currently offering potential challenges to the competitive market and poses threats like consumer infidelity.<sup>13</sup> The Act succinctly captures the essence of a fair market. However, the passage of time has disabled the current competition law regime to adequately address antitrust concerns raised by artificial intelligence.

### **III. TRACING THE POTENTIAL THREATS POSED BY ARTIFICIAL INTELLIGENCE TO COMPETITIVE MARKETS.**

Technological attributes of technology industries set them apart from traditional industries. *Firstly*, technology markets are dynamically driven and evolve through rapid innovation. The constant and rapid pace of technological change can act as an impediment for entities who try to exercise market power by domination.

Market power of a firm in these markets may turn out to be ephemeral.<sup>14</sup> *Secondly*, business models relying on vast collection and processing of big data in nearly real-time enable players in the digital space to offer a wide-range of innovative and customised services.<sup>15</sup> However, the perks offered by technology come along with a potential threat of market domination by various entities through innovation itself. AI is certainly an innovation which poses threats of market domination.

Evaluating on the horizontal level, the role of algorithms and artificial intelligence in collusion is an area that is increasingly being acknowledged in academic and policy forums.

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<sup>12</sup> B.S.N. Joshi & Sons Ltd. v. Ajoy Mehta, (2009) 3 SCC 458 (India), ¶ 17.

<sup>13</sup> Thomas Davenport et al., How artificial intelligence will change the future of marketing, 48 J. OF THE ACAD. MARK. SCI. 24 (2020), available at <https://link.springer.com/content/pdf/10.1007/s11747-019-00696-0.pdf>.

<sup>14</sup> Augustine Peter, Member, Competition Comm'n of India, Key Note Address by Mr. Augustine Peter, Member at ASSOCHAM 5th International Conference on Competition Law and Tech Sector (Jan. 19, 2018), available at <https://www.cci.gov.in/sites/default/files/speeches/Key%20Note%20Address%2C%20ASSOCHAM%205th%20International%20Conference%20on%20Competition%20Law%20and%20Tech%20Sector.pdf?download=1>.

<sup>15</sup> *Id* at 6.

Algorithms are the shortcuts humans use to give directions to computers. At its most basic, an algorithm simply tells a computer what to do next with an “and,” “or,” or “not” statement.<sup>16</sup>

The academic literature suggests four possible scenarios of algorithm-induced collusion:

1. *Messenger*, where humans use computers and the IT environment to better execute cartels,
2. *Hub and Spoke*, where a single algorithm is used to determine price by numerous users,
3. *The Predictable Agent*, where pricing algorithms act as predictable agents and continually adjust to each other’s prices and market, i.e. algorithm-enhanced conscious parallelism and
4. *Digital eye*, where **AI** operating in enhanced market transparency leads to an anti-competitive outcome.

Keeping in mind the obsolete nature of the 2002 Act, it will be very difficult to find ways to prevent collusion between self-learning algorithms. This might be one of the most challenging tasks that competition law enforcers have ever faced.<sup>17</sup>

The conversation of the use of competition or antitrust laws to govern AI is still at an early stage. However, it is needless to emphasize the fact that Competition Law finds its relevance in the data sphere. The data driven mergers or acquisitions such as Yahoo-Verizon, Microsoft-LinkedIn and Facebook-WhatsApp have demanded pre-emptive attention from the Competition Law enforcement bodies and therefore it is difficult to ignore the potential role of competition law in the governance of data collection and processing practices. It is

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<sup>16</sup> Tristan Greene, *A beginner’s guide to AI: Algorithms*, THE NEXT WEB (Aug. 3, 2018), available at <https://thenextweb.com/artificial-intelligence/2018/08/02/a-beginners-guide-to-ai-algorithms/>.

<sup>17</sup> B.S.N. Joshi & Sons Ltd. v. Ajoy Mehta, (2009) 3 SCC 458 (India).

important to note that the impact of Big Data goes far beyond digital markets and the mergers of companies such as Bayer, Climate Corp and Monsanto show that data driven business models can also lead to the convergence of companies from completely different sectors as well.<sup>18</sup>

The commission of European communities in the *Google/DoubleClick case*<sup>19</sup> examined the potential threat to competition due to a merger between Google and DoubleClick. Several complainants asserted that the merger would eliminate potential competition between Google and DoubleClick. While the various theories of harm brought forward by these complainants differ with regard to the details and nuances, they all rely on the presumption that DoubleClick has a number of advantages that would, absent the merger, allow it to develop into a key competitor of Google in the market for online ad intermediation and, by extension, in the market for the provision of bundled online ad intermediation and ad serving services.<sup>20</sup> Though the commission declared the merger to be valid, the case certainly opens up the competition and technology dichotomy.

The concerns rose by big data and technology are innately related to AI because AI's decision-making process is dependent upon the data accumulated over the internet. AI has the potential to induce the algorithm-based collusion.

#### **IV. THE CCI'S ORDER AGAINST THE SEARCH ENGINE GIANT.**

*In Re: Matrimony.com Limited and Google LLC*,<sup>21</sup> the Competition Commission of India imposed a penalty on the search engine 'Google' for abusing its dominant position in

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<sup>18</sup> Amber Sinha, Elonnai Hickok & Arindrajit Basu, *AI in India: A Policy Agenda*, THE CENTRE FOR INTERNET & SOCIETY (Sept. 5, 2018), available at <https://cis-india.org/internet-governance/blog/ai-in-india-a-policy-agenda>.

<sup>19</sup> Commission Decision of Mar. 11, 2018, declaring a concentration to be compatible with the common market and the functioning of the EEA Agreement, Case M.4731-Google/DoubleClick C(2008) 927, available at [https://ec.europa.eu/competition/mergers/cases/decisions/m4731\\_20080311\\_20682\\_en.pdf](https://ec.europa.eu/competition/mergers/cases/decisions/m4731_20080311_20682_en.pdf).

<sup>20</sup> *Id* at 60, ¶ 222.

<sup>21</sup> *In Re: Matrimony.com Limited v. Google LLC*, (2018) SCC OnLine CCI 1 (India).

the online search market. The informant submitted that Google runs its core business of search and advertising in a discriminatory manner thereby causing harm to advertisers and consequentially to the ultimate consumers. It was also submitted that Google is creating an uneven playing field by favouring Google's own services and partners through manual manipulation of its search results to the advantage of its vertical partners.<sup>22</sup>

It was also noted that in addition to running the search service, Google also provides a large number of vertical search services, including video (through YouTube), news (through Google News), maps (through Google Maps), etc. It has been vehemently affirmed that in order to promote Google's own vertical search sites, Google started mixing many of its vertical results into its organic search results. The effect of this activity is that when a user searches, for example, the name of a song on Google, he receives links to videos of that song from Google Video or YouTube, both of which are enterprises owned by Google.<sup>23</sup>

In its conclusion the Commission also noted that through the exponential growth of the internet, online markets have now developed an ability to cover an ever-increasing spectrum of commercial activities. The commercial bracket is not witnessing a creation of large online platforms which have the ability to wield substantial power over market participants. The online market platforms have access to the entire internet landscape including large volumes of personal data. Consequentially, they may assume a position where they are able to deter new innovation or tarnish consumer welfare.<sup>24</sup>

We must acknowledge that the CCI has been able to acknowledge a prominent display of technological advancement in a detrimental manner. Google's search engine results were found to be in contravention of the provisions of Section 4(2)(a)(i) of the Act. The CCI noted

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<sup>22</sup>*Id* at ¶ 3.

<sup>23</sup> *In Re: Matrimony.com Limited v. Google LLC*, (2018) SCC OnLine CCI 1 (India), ¶ 4. (If 'Id' can be used twice consecutively, then this may be changed to 'Id at ¶ 4')

<sup>24</sup>*Id* at ¶ 33.



in its order that Google through its search design has not only placed its own entity at a prominent position on search results but also curtailed market access to other verticals. It was also found that Google has provided an extended chain in its commercial units which leads the users to its specialised search result page (Google Flight) resulting into unfair imposition upon the users of general search services as well.<sup>25</sup>

The CCI has witnessed a situation where the online services platform offers potential threats to the competition sector. The advent of artificial intelligence (AI) also raises a serious proposition of competition principles being violated due to the AI systems and online search engines.<sup>26</sup> The lubricant to AI's engine is the programmed data. AI is often driven by big data processing.<sup>27</sup> The cumulative effect of AI and data can be very challenging and therefore demands introspection by the legislative and enforcement authorities.

## **V. THE EXISTING LACUNAS WITHIN THE COMPETITION POLICY OF INDIA.**

Essentially, AI poses three categories of regulatory challenges, namely market foreclosure and related exclusionary practices, novel ways of collusion, and new strategies to effectuate discrimination in pricing. AI may also raise concerns about technological sovereignty and wealth inequality.<sup>28</sup>

Automation of computerized protocols and the rapid developments in technology have changed the way we interact and indulge ourselves in communication and trade. We

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<sup>25</sup>Press Release, Competition Comm'n of India, CCI issues order against Google for search bias, imposes penalty (Feb. 8, 2018), available at [https://www.cci.gov.in/sites/default/files/press\\_release/Press%20Release%2007%20%26%20%2030%20of%202012\\_0.pdf](https://www.cci.gov.in/sites/default/files/press_release/Press%20Release%2007%20%26%20%2030%20of%202012_0.pdf).

<sup>26</sup>Shivendra Mishra, *How Artificial Intelligence will change the Indian Legal Industry*, MEDIUM (Jan. 31, 2018), available at <https://medium.com/@smishra.lmr/how-artificial-intelligence-will-change-the-indian-legal-industry-5cdaa17560b8>.

<sup>27</sup>Carlos Melendes, *Data is the lifeblood of AI, but how do you collect it?*, INFOWORLD (Aug. 8, 2018), available at <https://www.infoworld.com/article/3296044/artificial-intelligence/data-is-the-lifeblood-of-ai-but-how-do-you-collect-it.html>.

<sup>28</sup>Avinash M. Tripathi, *Designing competition policies for the age of AI*, LIVEMINT (Mar. 9, 2018), available at <https://www.livemint.com/Opinion/cgb8hI830DpAIzuLCO2ZaP/Designing-competition-policies-for-the-age-of-AI.html>.

may acknowledge this by having a cursory look at the way in which we purchase goods and services. This reveals an increased reliance on the internet, computers, and technology. The increased acceptance of technology has accelerated the relative decline of the high street trade.<sup>29</sup>

The Competition enforcement mechanism presupposes the existence of human conduct and the judicial bodies have adjudicated such anti-competitive conduct including, bid rigging.<sup>30</sup> The Competition enforcement typically focuses on possible illegal agreements between competitors, anticompetitive vertical restraints (such as resale price maintenance), the abuse of dominant market power, and mergers that have the potential to substantially arrest competition.<sup>31</sup> Such collusive agreements and anti-competitive conduct envisage an element of human intervention and participation.

However, we are shifting from the world where executives actively collude in smoke-filled rooms to a world where pricing algorithms continuously monitor and adjust to each other's prices and market data. Therefore, it is not necessary that collusive agreements will be entered among executives. Entities may unilaterally adopt their own pricing algorithm, which sets its own price. Therefore, anticompetitive intent may not exist necessarily. The executive members may not be able to predict if, when, and for how long the industry-wide use of pricing algorithms will lead to inflated prices. The danger here is not express collusion, but more elusive forms of collusion.<sup>32</sup>

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<sup>29</sup> Globalization 101, *Technology and Globalization* (2013), available at <http://www.globalization101.org/uploads/FilefTechnology/tech.pdf>.

<sup>30</sup> *Rajkumar Dyeing & Printing Works Private Ltd. and Anr. v. CCI*, (2014) SCC OnLine Del 6450 (India).

<sup>31</sup> FED. TRADE COMM'N, GUIDE TO ANTITRUST LAWS, available at <https://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/antitrust-laws>

<sup>32</sup> Ariel Ezrachi & Maurice E. Stucke, *Artificial Intelligence & Collusion: When Computers Inhibit Competition*, 2017 U. ILL. L. REV., 1775, 1782 (2017), available at <https://illinoislawreview.org/wp-content/uploads/2017/10/Ezrachi-Stucke.pdf>.

One of the categories of algorithm induced collision is the Digital Eye. Through Digital Eye the competitors can unilaterally create and use computer algorithms to achieve a given target, such as profit maximization. The machines, through self-learning and experiment, have the ability to independently determine the methods to optimize profit.<sup>33</sup>

Another example of anti-competitive conduct without human intervention is the ability of PC algorithms to process volumes of data with a very quick and lasting, non-emotional reaction, underlying the assumptions on which competition protection has so far been built, cease to work. Axiomatically, the market can be riddled of price competition without any hint of contact or agreement that is currently considered as prerequisite to a cartel.<sup>34</sup>

In *Meyer v. Kalanick*,<sup>35</sup> Uber's founder defended himself by claiming that prices set by the algorithm simply followed "natural market fluctuations". The fact however was that these fluctuations were not perceived and evaluated by imperfect human senses and brains but by a refined PC algorithm. The decision in *Eturas* case<sup>36</sup> gives a valuable contribution to the definition of concerted practices in the age of technology. The court noted that the evidence at hand is capable of justifying the existence of concerted practice between the parties. The parties were regarded as having tacitly assented to a common anticompetitive practice on two grounds. Taking into account the subsequent conduct and secondly on the existence of a casual connection between the concentration and market conduct. Therefore, the members of any entity cannot cede away their obligations and responsibilities on the ground that the AI mechanism does not involve any human conduct. It can be inferred that

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<sup>33</sup>Maurice E. Stucke & Ariel Ezrachi, *How Pricing Bots Could Form Cartels and Make Things More Expensive*, HARV. BUS. REV. (Oct. 27, 2016), available at <https://hbr.org/2016/10/how-pricing-bots-could-form-cartels-and-make-things-more-expensive>.

<sup>34</sup>Václav Šmejkal, *Cartels by Robots – Current Antitrust Law in Search of an Answer*, 4 J. FOR INT'L & EUR. L., ECO. & MKT. INTEGRATIONS 1 (2017), available at <https://hrcak.srce.hr/192773>

<sup>35</sup> *Meyer v. Kalanick*, 291 F. Supp. 3d 526 (S.D.N.Y. 2018).

<sup>36</sup> Case C-74/14, "Eturas" UAB and Others v. Lietuvos Respublikos konkurencijos taryba, EU:C:2016:42.

the use of AI programs by various entities give a tacit assumption of liability upon the entities using AI in situations of collusive practices.

These instances of litigation have exposed the vulnerable position of competition law enforcement mechanism and also few inherent lacunas within the legislative framework. These challenges have the potential to disrupt the competition prospects in India with no liability regime to fix accountability on the complex algorithms process.

## **VI. CONCLUSION.**

The current antitrust regime is in search of an answer to the perils created by the algorithms through artificial intelligence. The big data giants may use sensitive information to create complex algorithms and achieve the intended result through tacit competition malpractices. The succinct nature of these algorithms is that it does not involve any human conduct and therefore the calculations by the AI systems create a market effect of profitability. These intricate issues are not adequately addressed by the current competition law regime. Therefore, it becomes it equally imperative that the legislators must foresee the predicaments offered by AI as the liability fixation becomes extremely difficult when the decision is taken through automated mechanism by self learning and using sensitive data and algorithms.

Since algorithms are designed for specific purposes, the number of market competitors, the nature of competition, and the mechanism of creation of the algorithm play a huge role in allowing consumers to compare products and make an informed choice. However, a potential solution to increase transparency and cooperation is that the entities may be required to publicly disclose the data used in their algorithms. Another viable option can be the programming of computers to ignore commercially sensitive information which

may help the competitors to arrive at a competitive price. Be that as it may, one can never account for the human nature of an aggressive competitor in a non-fluid market.