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TECHNOLOGICAL MONOPOLIES, INNOVATION, AND THE PERSONAL FREEDOM TO FORM BUSINESSES: LIKE OIL AND WATER?

By Christopher K.L. Young¹

I. INTRODUCTION

In 2022, the California legislature passed Assembly Concurrent Resolution No. 95 authorizing the California Law Revision Commission to study potential revisions to California's state antitrust law.² Among the topics the CLRC is studying is whether California's antitrust law should be revised in the context of technology companies such that analysis of antitrust injury in that setting reflects competitive benefits such as innovation and permitting the personal freedom of individuals to start their own businesses and not solely whether such monopolies act to raise prices.³

The Cartwright Act is California's primary state antitrust law. It was passed in 1907 and appeared to be an express attempt to rein in the cartels that were rampant in the state at that time.⁴ The text of the Cartwright Act is reflective of the threats to competition that were prevalent at the time of its passing: given that cartels dominated industry, the Cartwright Act targeted multi-firm conduct

and contained no explicit provision targeting single firm conduct analogous to Section 2 of the federal Sherman Act.⁵ Now, over one hundred years later, California is again facing serious competition-related issues. Rather than multi-firm cartels, the threat now comes from single-firm conduct by large sprawling technology companies.⁶ The largest technology firms are wielding their dominance to entrench their market power. Indeed, reports by federal legislative bodies such as the House Judiciary Committee have documented anticompetitive practices by technology companies such as acquiring nascent competitors and capitalizing on their role as gatekeepers to maintain their market power. The California antitrust laws should certainly be stiffened in response to the growing prevalence of these practices and, in particular, to account for single-firm conduct by large technology firms.

There are those, however, who say any such expansion of the Cartwright Act should account for the competitive benefits that these technology companies provide. They argue that these

companies provide procompetitive values—such as fostering innovation and individuals’ freedom to start their own businesses—which should be considered when measuring single firm conduct, in addition to whether monopolies raise prices. That would, however, dilute any amendment seeking to strengthen California’s antitrust laws by targeting single-firm conduct and would seem contrary to the original purposes of the Cartwright Act, which is to promote competition for not only consumers, but also for nascent competitors.⁷

It is first necessary to address three reasons why explicit consideration of procompetitive benefits of single-firm conduct is inconsistent with the purpose and goals of the Cartwright Act. First, courts interpreting the Cartwright Act already consider competitive benefits like innovation in antitrust analysis. Second, inclusion of procompetitive benefits in the law presupposes that the existing California antitrust laws do not suppress innovation and the personal freedom of individuals to start their own businesses. Third, it presumes that the contemporary Cartwright Act framework solely focuses on whether an allegedly anticompetitive practice affects price. Part I will address each of these presumptions and demonstrate why an explicit requirement to consider procompetitive benefits is unnecessary.

Second, it is highly unlikely that a nascent innovative firm would have the market power to behave anticompetitively in the first place. So any revision to the law should be careful not to integrate any provisions that may inadvertently give larger companies a way to inoculate their anticompetitive conduct. Indeed, it is not those persons whom the antitrust laws are concerned about; rather, it is the sprawling mega-corporations whose reach is practically boundless in the contemporary digital world. As revealed by the House Subcommittee on the Judiciary Subcommittee on Antitrust, Commercial and Administrative Law’s Investigation of Competition in Digital Markets, many of the largest tech companies have engaged in strategies that include acquisition of putative competitors in their infancy in order to protect their market

power. Further, these same companies often use their status as gatekeepers of walled gardens to collect data from competitors to then advantage their own products. Experience has shown that the consolidation of technology companies has led to a stifling of innovation and decreased incentives for those who otherwise may have started their own businesses to do so. Part II will highlight some examples of this.

Lastly, in light of the rapid growth of the largest technology companies, the Cartwright Act should be updated to be more stringent with respect to large technology companies without being hampered by consideration of purported procompetitive benefits. Technology has advanced many times over since the Cartwright Act was enacted in 1907. Emerging technologies such as AI, machine learning and large language models can mitigate collective action or coordination problems which limit the ability of human beings to maintain monopoly or supracompetitive prices. Anticompetitive single-firm conduct is possible at unprecedented speed and scale by taking advantage of these emergent technologies. Indeed, advances in algorithmic prices have already led to new and faster methods of anticompetitive multi-firm conduct. Advances in AIs and large language models and the concentration already occurring in that space also represent a potential new inflection point for competition. Part III will address why, as opposed to making the Cartwright Act more lax, it should rather be strengthened and sharpened to address the changing digital markets without necessitating any balancing of procompetitive benefits.

II. THE RIGHT QUESTIONS

The idea that any revision of the Cartwright Act must include consideration for procompetitive benefits rather than just anticompetitive harm may lead to conclusions unwarranted by the facts. First, antitrust analysis already takes procompetitive factors into account, so any revision of the Cartwright Act should strictly be more stringent rather than build in room to wiggle.⁸ The Cartwright Act, like the Sherman Act, “has been interpreted

to permit by implication those restraints found to be reasonable.”⁹ Indeed, the Cartwright Act itself embeds a caveat that it is not meant to restrain procompetitive restraints: “It is not unlawful to enter into agreements or form associations or combinations, the purpose and *effect of which is to promote, encourage or increase competition in any trade or industry, or which are in furtherance of trade.*”¹⁰ Even presuming that single-firm conduct or market consolidation can lead to increased competition in innovation, that purported justification will be taken into account as the current analytical framework is constructed without any need to embed it formally into statute.¹¹

The idea that market concentration can lead to innovation seems a bit counterintuitive. “[T]echnology markets are—in the end—just product markets,”¹² and it has long been recognized that markets with few rivals permit coordination either overtly or tacitly to achieve supracompetitive prices (and other anticompetitive effects including suppressed innovation).¹³ In what instances therefore would otherwise anticompetitive behavior lead to increased innovation?

We start with the economic rationale as to why competition begets innovation with the necessary caveat that evaluation of procompetitive justifications is necessarily fact specific.¹⁴ Anticompetitive conduct restricting supply can, for example, hypothetically lead to higher quality of service. This rationale in the technology context is fairly intuitive, however: competitors are incentivized to innovate and produce better products and services in order to attract more consumers. Small innovative firms can grow into larger ones, offering more competition at scale. Conversely, when markets are concentrated, larger firms may be able to leverage more funding to research and development which can lead to further innovation. But when large companies acquire the small innovative firm, that possibility could be eliminated. Indeed, there is evidence that this is precisely what is happening. Meta, Alphabet, Microsoft, and Apple have made more than 500 acquisitions since their founding.¹⁵ And as

described more fully below, evidence suggests that these mergers do not lead to the development of the acquired product, but rather stifle innovation. The evidence thus does not bear out baking in an additional consideration for procompetitive benefits with respect to technology companies.

Second, a proposal to include statutory consideration of procompetitive justifications in the context of technology companies suggests that the California antitrust laws as written does not adequately promote innovation or the personal freedom of individuals to start businesses in that same context. But this seems to be belied by the empirical number of startups with roots in California.¹⁶ California, even with its relatively broad and rigorous antitrust regime, is still appealing to innovators and entrepreneurs. Indeed, California is routinely near the top of lists of total startup funding or per-capita startup funding.¹⁷ As explained by the California Supreme Court, while certainly true that the “[a]ntitrust laws are designed primarily to aid the consumer,” “[a]nother beneficiary of antitrust law is the competitor himself.”¹⁸ Thus, the antitrust laws at least as understood by the California Supreme Court exist not only to protect the consumer, but also the nascent competitor. Failing to regulate the monopolist can nip competitors in the bud, resulting in a less competitive environment. Ensuring that the antitrust laws are rigorously enforced, especially to mitigate market concentration, serves those goals as entrepreneurs would be competitors to the large tech companies and should receive protection from the largest tech companies.

Third, it has long been recognized that price is not the only metric through which competition can be harmed. Courts have long recognized other anticompetitive harms such as harms to innovation.¹⁹ Amending the Cartwright Act to further protect competitive benefits *for technology* will only lead to the market dominance of select firms. The issue here is that companies “that once were scrappy, underdog startups that challenged the status quo have become the kinds of monopolies we last saw in the era of oil barons and railroad tycoons.”²⁰ Thus, it would be inapposite and out of step with the

purpose of antitrust law to incorporate an explicit mandate to consider procompetitive justifications in the technology context in the Cartwright Act given that it would be a boon to the companies who enjoy market dominance.

III. THE NEED FOR CONSIDERATION OF PROCOMPETITIVE JUSTIFICATIONS IS BELIED BY EMPIRICAL FACTUAL EVIDENCE

In the single firm context, the acquisition of nascent competitors by large companies wielding significant market power can lead to anticompetitive conditions.²¹ There is no real dispute that the dominant tech firms have engaged in numerous acquisitions. Facebook, Google, Amazon, Microsoft and Apple are engaged in a strategy of buying up nascent competitors.²² The durability of these firms' market dominance harms consumers because it reduces the ability of consumers to obtain not only competitively priced goods or services, but also high quality, variety, and goods and services.²³ The current system of large companies swallowing up nascent competitors stifles rather than promulgates innovation, and so any revision of the Cartwright Act should take aim at these companies without any consideration for procompetitive benefits unsupported by evidence.²⁴

In June 2019, the House Committee on the Judiciary initiated an investigation into the state of competition in online businesses. The committee collected evidence from Amazon, Apple, Facebook and Google, as well as third parties. The report's findings corroborated what many had already suspected. As described in the report, a significant part of the strategy of these large tech companies is to acquire nascent competitors in order to maintain their market power. For example, Mark Zuckerberg told Facebook's former Chief Financial Officer, "the purpose of acquiring nascent competitors like Instagram was to neutralize competitive threats and to maintain Facebook's position."²⁵ This statement is incredibly problematic because it evidences precisely the innovation stifling that antitrust laws

seek to prevent, namely the snuffing out of potential competitors and innovative products before they have a chance to fully mature.²⁶

As another example, Google acquired Waze in 2013.²⁷ Market competitors viewed Google and Waze as close competitors in the "highly concentrated" market for navigable digital map databases and turn-by-turn navigation applications.²⁸ Indeed, Waze was viewed "as the only firm meaningfully positioned to dislodge Google Maps . . ." Noam Bardin, Waze's CEO had also stated that Waze was "the only reasonable competition" to Google Maps.²⁹ This led to the suggestion that Google was intending to acquire Waze in order to squash a potential competitor. Post-acquisition, the Google and Waze teams have remained separate and "Google has used Waze as an ads guinea pig." Bardin later wrote that "We could have probably grown faster and much more efficiently had we stayed independent" and that Google imposed constraints on Waze.³⁰

It is certainly true that the dominance of Google, Amazon, Facebook, and Apple provides certain benefits to society.³¹ But a significant cost has been levied on consumers because of the entrenched dominance of a select few firms.³² The result is a dearth of innovation because these companies eliminate potential competitors who may beget better and more innovative products, and, even after acquisition, acquired products and services are left to wither on the vine rather than grow.

The largest tech firms enjoying monopoly power in their relevant markets have been engaged in a series of anticompetitive mergers.³³ They have done so by acquiring nascent competitors to discontinue their target's innovation projects and preempt future competition.³⁴ The impact of this catch, kill, or envelope strategy is product deterioration.³⁵ As is becoming more recognized, price is not the only metric that is indicative of monopoly power, so is the ability to erode consumer privacy without prompting a market response.³⁶ A platform's ability to abuse its consumers' privacy without suffering the loss of consumers is indicative of an anticompetitive

environment.³⁷ Because consumers suffer from decreased privacy protection coupled with the meteoric rise of misinformation, consumers bear the brunt of this unfettered anticompetitive behavior.³⁸ The effect of these mergers is that nascent tech companies are prevented from entering respective markets while entrenching the market power of the select few.³⁹

Acquisitions of nascent competitors is not the only way the largest tech companies use their market power to favor themselves. Given that many of them are platforms, they are able to serve as gatekeepers of the platform for their own benefit. For example, Amazon enjoys entrenched market power in the U.S. online retail market.⁴⁰ Amazon has built its success in part by hamstringing small to medium size businesses who are forced to use Amazon or fold.⁴¹ To put Amazon's market dominance into perspective, of the "2.3 million active third-party sellers on its marketplace worldwide . . . about 37 percent of them . . . rely on Amazon as their sole source of income."⁴² Another disturbing reality with Amazon is that Amazon Web Services functions as the "critical infrastructure for many businesses with which Amazon competes."⁴³ Amazon, through its control of the "Buy Box," the window which is used for customers to purchase items when they search for products, is able to choose winners and losers.⁴⁴ Amazon does this through the enormous amounts of data it is able to collect through the Buy Box. Amazon also gives its own products favorable treatment relative to competing sellers through self-preferencing product placement on the Buy Box. The House Subcommittee Report describes examples of sellers who created new top-selling products whose ideas were copied by Amazon, which then offered a competing product under its private label and took over the Buy Box, making it impossible to compete.⁴⁵

Amazon is not the only company that engages in self-preferencing. Apple too was described to engage in self-preferencing on the App Store through a practice known as "Sherlocking."⁴⁶ Apple dominates the mobile operating system market with its iOS system.⁴⁷ Apple uses its entrenched position

"to create and enforce barriers to competition and discriminate against and exclude rivals while preferencing its own offerings."⁴⁸ For example, Apple engages in a strategy of misappropriating "competitively sensitive information and charging app developers supra-competitive prices within the App Store."⁴⁹ Developers have further alleged that Apple abuses its position as the provider of iOS and the operator of the App Store to collect competitively sensitive information about popular apps and then build competing apps or integrate popular functionality into iOS.⁵⁰

Google likewise appears to self-preference its own services. Documents showed that Google "developed a multi-pronged strategy" which included: "(1) misappropriating third-party content; and (2) privileging Google's own services while demoting those of third parties."⁵¹ For example, Google built a competing vertical search engine to compete with Yelp. When Yelp asked Google to remove its proprietary content from Google's competing service, Google responded the only way that was possible was to remove Yelp from Google's general results entirely. "Yelp relied so heavily on Google for user traffic that the company could not afford to be delisted—a fact that Google likely knew."⁵²

As described above, it seems apparent that the largest technology companies have not been using their market power as incubators for innovation, but rather to eliminate nascent competitors. The empirical evidence does not seem to support the idea that while the Cartwright Act certainly needs to be strengthened to explicitly account for single-firm conduct, any temptation to consider innovation as a procompetitive defense should be approached with skepticism in order to ensure the largest companies do not use any such consideration to protect themselves from scrutiny.

IV. THE REVISION TO THE CARTWRIGHT ACT SHOULD ACCOUNT FOR NEW TECHNOLOGIES THAT FACILITATE ANTICOMPETITIVE CONDUCT

Beyond the empirical examples of a few of the largest firms wielding their outsized power to eliminate emerging competition, the growth and development of new technologies also creates the risk of new means of anticompetitive activity at a scale not possible before. The ability of firms to now coordinate and move at previously unheard of speed has already led to unprecedented concentration for the largest technology firms.⁵³ The influence of changing technology is shifting the landscape of competitive markets globally. While leaps in technology can be causes for celebration, they can also encourage and facilitate new means of anticompetitive behavior which the antitrust laws, as currently constructed, may be ill-equipped to face.

For example, artificial intelligence employing algorithmic pricing is one of these fast-developing new technologies.⁵⁴ While it is certainly true that the growth of AI offers many potential benefits, AI also creates new ways for firms to behave anticompetitively. On the one hand, AI may allow firms to respond immediately to changing market conditions or competitor pricing. On the other hand, AI may facilitate price-fixing arrangements at speeds not possible before and while mitigating coordination issues that make such schemes apt to fall apart when done in analog.

In the multi-firm context, algorithmic pricing and coordination may (and perhaps according to some, may have already) lead to a potential catastrophe for consumers.⁵⁵ A traditional agreement may be hard to prove when algorithms are involved because establishing communication between two independent actors may be impossible. It is a basic tenet of economics that members of a cartel all have an incentive to cheat because even pricing slightly under the agreed-upon price will increase the cheating firm's profits. Detecting a cheating firm's lower prices is critical for a cartel's survival. Algorithmic pricing can make detection of lower

prices easier. Because "the digital world increasingly overcomes the limitations making it easier to reach agreements, monitor compliance, and apply immediate sanctions, the law will axiomatically capture fewer instances of coordination than it did before."⁵⁶

Government regulators expressed concern about the anti-competitive implications of using algorithmic pricing. While serving as Chairperson of the Federal Trade Commission (FTC) Maureen Ohlhausen is quoted:

Imagine a group of competitors sub-contracting their pricing decisions to a common, outside agent that provides algorithmic pricing services. Each firm communicates its pricing strategy to the vendor, and the vendor then programs its algorithm to reflect the firm's pricing strategy. But because the same outside vendor now has confidential price strategy information from multiple competitors, it can program its algorithm to maximize industry-wide pricing. In effect, the firms themselves don't directly share their pricing strategies, but that information still ends up in common hands, and that shared information is then used to maximize market-wide prices. Again, this is fairly familiar territory for antitrust lawyers, and we even have an old-fashioned term for it, the hub-and-spoke conspiracy.⁵⁷

In the single-firm context, the development and implementation of machine learning and large language models also decrease transactional costs for businesses that deploy them. And the knowledge and skill required to build these models are also becoming concentrated in only a few firms. Broadly, large language models, which are a type of "AI's," ingest vast amounts of text in order to remember patterns and structures of the input in order to generate outputs in response to inputs.⁵⁸ These large language models then serve as the basis for new digital applications, many of which are being implemented by the largest tech companies.⁵⁹

Although large language models offer new opportunities for innovation, they are also incredibly

resource intensive. They are hardware intensive, generally requiring multitudes of computers and servers; they require significant data specialization in order to collect and curate the massive data required to “train” these large language models; and they require the coding expertise necessary to create a user-friendly interface to access the large language model. This expertise can be costly, and represent significant barriers to entry in order to create and deploy a large language model. According to some estimates, it may cost \$500 million for the hardware and another \$500 million to train a model.⁶⁰

Each of these categories of requisite investment also represent a point of potential market concentration. For example, because of the astronomical computational power required to host a large language model, very few companies can provide those services. Reportedly, up to 80-90% of early round venture capital is spent with the so-called “Big 3” cloud providers: Amazon Web Services, Google’s Cloud Platform, and Microsoft’s Azure.⁶¹ Likewise, because large language models are only as good as the data used to train them, having access to real-time access to relevant data is important in order to ensure responses are accurate and not erroneous “hallucinations.” Accordingly, many of the large tech monopolies have a head-start given their already extensive data-collection practices.⁶² Furthermore, the knowledge and expertise necessary to create a large language model is extremely specialized and limited.

Indeed, the market concentration is already being borne out. According to a 2023 study performed by the Large European AI Models initiative, roughly 86% of large language models emerged from the private sector many from the same corporate players such as Google, Meta and Microsoft,⁶³ with 13% from the academic sector.⁶⁴ And given that AI appears to have strong network effects and economies of scale, e.g., a company with more infrastructure can host better models, better models attract better engineers, which then lead to better models and increased profits, this market concentration is likely to increase over time, not

to mention, create a new walled garden for large technology companies to gatekeep.

Courts are already being confronted with antitrust cases involving these emergent technologies, at least in the conspiracy context. In *United States v. Topkins*, individuals reached an explicit agreement to use an algorithm to fix prices, i.e., they used an algorithm to facilitate their pre-arranged price fixing conspiracy.⁶⁵ The application of the law in that case is fairly clear—the ringleaders of the anticompetitive agreement made an agreement to use an algorithm to coordinate (i.e., fix) prices. But what if the role of the humans is more complex? What if, for example, an oligopoly adheres to an algorithm that reacts to changes in market conditions in real-time?

Further, while there has not yet been a case the author is aware of challenging the use of a large language model in a single-firm context, governmental regulators are already beginning to notice their potential anticompetitive effects.⁶⁶ Given the high barriers to entry and economies of scale, it seems like a challenge is on the horizon. It also is fair to say that the Cartwright Act is not equipped to deal with these complexities now and should be updated to account for it. **Conclusion**

California has already been and likely will continue to be a hotbed for innovation. Part of that success can be attributed to the Cartwright Act and its commitment to preserving competition. The law, however, must be tweaked and adjusted in response to ever changing technology, especially in light of actual empirical evidence. And the evidence we have seen indicates that the largest technology firms have been wielding their market power to stifle rather than facilitate innovation. Thus, the Cartwright Act should be strengthened to account for the rapid change in technology and the growing litany of anticompetitive single-firm conduct by the largest firms. Further, the impetus to consider procompetitive benefits in the technology context with respect to any update of the Cartwright Act would be unnecessary and perhaps even misguided. Given the growing risks of further developing technology, such as the ability of AI to employ

algorithmic pricing and thereby create new means to coordinate at ever-faster speeds, or to help concentrate market power even further, these large firms may become so entrenched that they make any meaningful competition even more difficult. To the extent innovation and the personal freedom of individuals to start their own businesses should be taken to account, it should be done so in favor of strengthening the antitrust laws against the largest companies who have been suppressing those goals.

1. With many thanks to Aaron Cera, then summer associate, soon-to-be post-bar law clerk. Christopher K.L. Young is a partner at Joseph Saveri Law Firm, LLP in San Francisco, CA. He is also active in the Antitrust Section of the American Bar Association and the Asian American Bar Association of the Greater Bay Area. The views expressed herein are solely those of the authors, and do not necessarily represent the views of their employers or any other association.
2. Assem. Con. Res. 95, 2021-22 Reg. Sess. Ch. 147 (Cal. 2022).
3. *Id.*
4. John M. Landry & Kirk A. Hornbeck, *One Hundred Years in the Making: the Cartwright Act in Broad Outline*, 17 J. Antitrust & Unfair Competition L. Section State Bar Cal. 7 (2008).
5. *See id.* at 7-8.
6. Indeed, the market dominance of large technology companies has not escaped scrutiny from governmental enforcers. *See, e.g.*, Press Release, U.S. Dep't of Justice, Office of Pub. Affairs, Nine Additional States Join Justice Department's Suit Against Google for Monopolizing Digital Advertising Technologies (Apr. 17, 2023), <https://www.justice.gov/opa/pr/justice-department-sues-google-monopolizing-digital-advertising-technologies..>
7. *See, e.g., Marin Cnty. Bd. Of Realtors, Inc. v. Palsson*, 16 Cal.3d 920, 935 (1976); *Flagship Theatres of Palm Desert, LLC v. Century Theatres, Inc.*, 55 Cal. App. 5th 381, 416 (2020) (“[T]he Cartwright Act’s purpose is to ‘to protect and promote competition for the benefit of consumers.’”); *see also* Landry, *supra* note 4.
8. California courts regularly apply rule of reason analysis in Cartwright Act cases, which broadly requires a balancing of procompetitive justifications with the anticompetitive conduct. *See, e.g., Palsson*, 16 Cal.3d at 934-35 (“Under the rule of reason standard, pursuant to the salutary purposes of the antitrust law, we must analyze the economic effects of the board’s practices and then consider possible justifications for the practices.”); *Flagship Theatres*, 198 Cal. App. 4th at 1374 (“Under the rule of reason, the challenged conduct is unlawful only if its anticompetitive effects outweigh its procompetitive effects.”); *see also In re Cipro Cases I & II*, 61 Cal. 4th 116, 146-47 (2015) (“To determine whether an agreement harms competition more than it helps, a court may consider ‘the facts peculiar to the business in which the restraint is applied, the nature of the restraint and its effects, and the history of the restraint and the reasons for its adoption.’”).
9. *Corwin v. Los Angeles Newspaper Serv. Bureau, Inc.*, 4 Cal. 3d 842, 853 (1971).
10. Cal. Bus. & Prof. Code § 16725 (emphasis added).
11. At least for cases under the quick look approach or the rule of reason, California courts have adhered to “the prevailing standard” “which measures whether the anticompetitive aspect of [the] restraint outweighs its procompetitive effects. *See, e.g., Marsh v. Anesthesia Serv. Med. Grp., Inc.*, 200 Cal. App. 4th 480, 495 (2011) (citing *Exxon Corp. v. Superior Court.*, 51 Cal. App. 4th 1672, 1681 (1997)); *see also In re Cipro Cases*, 61 Cal. 4th at 147.
12. Michael L. Katz & Howard A. Shelanski, *Mergers and Innovation*, 74 Antitrust J. 1, 39 (2007).
13. For example, the U.S. Department of Justice and Federal Trade Commission recognize in their Horizontal Merger Guidelines that mergers may diminish competition by enabling coordinated interaction as a result of increased market concentration. *See* Horizontal Merger Guidelines, § 7 (2010).
14. Indeed, courts have recognized that the weighing of procompetitive justifications and anticompetitive conduct is fact intensive and can be difficult to determine with certainty without sufficient discovery. *See, e.g., In re Cipro*, 61 Cal. 4th at 146-47 (“To determine whether an agreement harms competition more than it helps, a court may consider ‘the facts peculiar to the business in which the restraint is applied, the nature of the restraint and its effects, and the history of the restraint and the reasons for its adoption.’”); *see also Eddins v. Redstone*, 134 Cal. App. 4th 290, 303 (2005) (“Ambiguous evidence or inferences showing or implying conduct that is as consistent with permissible competition by independent actors as with unlawful conspiracy by colluding ones do not allow such a trier of fact so to find” (quoting *Aguilar v. Atl. Richfield Co.*, 25 Cal.4th 826, 303 (2001))); *Snow*

- v. *Align Tech.*, 586 F. Supp. 3d 972, 979 (N.D. Cal. 2022) (commenting in Cartwright Act case that the test of whether a restraint was “reasonably necessary” for a procompetitive agreement is an “inherently fact-specific inquiry that is difficult to determine with certainty at the motion to dismiss stage.”)
15. Herbert Hovenkamp, *Prophylactic Merger Policy*, 70 *Hastings L.J.* 45, 71 (2018).
 16. James Cook, *The Largest and Most Successful Startups*, *BUS. LEADER*. (July 15, 2022) <https://www.businessleader.co.uk/which-us-states-have-the-largest-and-most-successful-startups/>.
 17. See Joanna Glasner, *These U.S. States Have The Most Startup Investment For Their Size*, *CRUNCHBASE NEWS*, (Nov. 10, 2021) <https://news.crunchbase.com/startups/states-per-capita-startup-investment-massachusetts-new-york-california/>.
 18. *Marin Cnty. Bd. Of Realtors, Inc. v. Palsson*, 16 Cal.3d 920, 935 (1976).
 19. Joshua P. Davis & Anupama K. Reddy, *AI and Interdependent Pricing: Combination Without Conspiracy?*, 30 *Competition: J. Antitrust, UCL & Privacy* 1, 2- 3 (2020).
 20. STAFF OF SUBCOMM. ON ANTITRUST, COMM., AND ADMIN. LAW OF THE COMM. ON THE JUDICIARY OF THE H.R., 117th CONG., INVESTIGATIONS OF COMPETITION IN DIGITAL MARKETS: MAJORITY STAFF REPORT AND RECOMMENDATIONS 1–2 (Comm. Print 2020), <https://www.govinfo.gov/content/pkg/CPRT-117HPRT47832/pdf/CPRT-117HPRT47832.pdf> [hereinafter HOUSE JUDICIARY REPORT].
 21. Notably, regulating single firm conduct is a potential gap within the Cartwright Act. See *Asahi Kasei Pharma Corp. v. CoTherix, Inc.*, 204 Cal.App.4th 1, 9 (2012) (describing how “the provisions of the Cartwright Act could not be used to challenge mergers and acquisitions and found that ‘the drafters of the Cartwright Act intended to make their law applicable only to situations in which the parties improperly collude and continue as separate, independent entities, and not to situations in which, by virtue of purchase and sale, or merger, one or more of the entities ceases to exist.’”) (citing and quoting *California ex rel. Van de Kamp v. Texaco, Inc.*, 46 Cal.3d 1147, 1167 (1988)).
 22. HOUSE JUDICIARY REPORT, *supra* note 20, at 1-2.
 23. *Id.* at 99.
 24. *Id.* at 107.
 25. *Id.* at 125.
 26. *Id.* at 2.
 27. *Id.* at 197.
 28. *Id.* at 199.
 29. *Id.*
 30. Paresh Dave, *Waze’s ex-CEO Says App Could Have ‘Grown Faster’ Without Google*, *REUTERS*, (Feb 18, 2021 5:04 PM) <https://www.reuters.com/article/us-alphabet-google-waze/wazes-ex-ceo-says-app-could-have-grown-faster-without-google-idUSKBN2AJ02O>
 31. HOUSE JUDICIARY REPORT, *supra* note 20, at 2.
 32. *Id.* at 110.
 33. *Id.* at 111.
 34. *Id.* at 8.
 35. *Id.*
 36. *Id.* at 51.
 37. Privacy can be considered like any other economic metric, e.g., price, quantity, or quality. The ability to degrade privacy would in a competitive environment lead to the loss of consumers to a competitor with greater privacy protections. See *id.* at 51-52.
 38. *Id.*
 39. *Id.* at 113.
 40. *Id.* at 9.
 41. *Id.*
 42. *Id.* at 9-10.
 43. *Id.*
 44. *Id.* at 209.
 45. *Id.* at 234.
 46. *Id.* at 306.
 47. *Id.* at 234.
 48. *Id.* at 10.
 49. *Id.* at 11.
 50. *Id.* at 305-06.
 51. *Id.* at 152.

52. *Id.* at 153.
53. *Id.* at 145; see also Davis & Reddy, *supra* note 19, at 16.
54. Michal S. Gal, *Algorithms As Illegal Agreements*, 34 Berkeley Tech. L.J. 67, 70 (2019).
55. HOUSE JUDICIARY REPORT, *supra* note 20, at 16.
56. Gal, *supra* note 54, at 117.
57. Maureen K. Ohlhausen, Acting Chairman, Fed. Trade Comm'n, Remarks at the Concurrences Antitrust in the Financial Sector Conference, *Should We Fear the Things That Go Beep In the Night? Some Initial Thoughts On the Intersection of Antitrust Law and Algorithmic Pricing* 10 (May 23, 2017).
58. See generally Adrian Tan, *What are Large Language Models*, Machine Learning Mastery (May 19, 2023) <https://machinelearningmastery.com/what-are-large-language-models/>.
59. For example, many open-source models are based on LLaMA, which is an open-source large language model released by Meta. See Will Douglas Heaven, *The open-source AI boom is built on Big Tech's handouts. How long will it last?*, MIT Tech. Rev. (May 12, 2023), <https://www.technologyreview.com/2023/05/12/1072950/open-source-ai-google-openai-eleuther-meta/>.
60. See *AI may favor big tech incumbents*, Goldman Sachs (June 8, 2023), <https://www.goldmansachs.com/intelligence/pages/ai-may-favor-big-tech-incumbents.html>.
61. Matt Borstein et al, *Who Owns the Generative AI Platform?*, Andreessen Horowitz (Jan. 19, 2023) <https://a16z.com/2023/01/19/who-owns-the-generative-ai-platform/>
62. See HOUSE JUDICIARY REPORT, *supra*, note 20 at 32-35.
63. See generally Nathan Benaich & Ian Hogarth, *State of AI Report 2022* (2022), <https://www.stateof.ai/>.
64. LEAM:AI, *Large AI Models for Germany - Feasibility Study* 56 (2023), <https://leam.ai/wp-content/uploads/2023/05/LEAM-Feasibility-STudy.pdf>.
65. Plea Agreement, *United States v. Topkins*, No. 3:15-cr-00201-WHO (N.D. Cal. Apr. 30, 2015).
66. See, e.g., Press Release, Competition & Mkts. Auth., *CMA Launches Initial Review of Artificial Intelligence Models* (May 4, 2023), <https://www.gov.uk/government/news/cma-launches-initial-review-of-artificial-intelligence-models>.