Report to the California Law Review Commission
Antitrust Law: Study B-750

Competition and Artificial Intelligence

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I. Introduction

The ubiquity and expansion of digital ecosystems has myriad implications across the economic, political, and social landscapes. These include market power, consumer choice, privacy, diversity in the media, and innovation. The state of competition in markets where major digital players operate is a common theme that motivates many of these policy concerns and issues.

The digital "ecosystems," or business models featuring a platform, cloud technology, and a variety of applications, are particularly dynamic and innovative. Moreover, research shows that digital ecosystems grow largely through acquisition, as opposed to through organic growth.[1] Digital ecosystems also possess natural economic features that can lead to market concentration and make it difficult for enforcers to disentangle legitimate M&A and business practices from those designed to unlawfully entrench or extend market power.

As a result, digital ecosystems pose obvious challenges for antitrust enforcement designed to protect competition while promoting incentives for digital players to continue to innovate. Indeed, merger enforcement was largely dormant for decades in the digital sector. It has been only in the last five years that U.S. federal and state antitrust enforcers have meaningfully addressed concerns over market power in this sector. This has taken the form of a series of recent merger challenges and large monopolization cases involving the largest digital ecosystems. As discussed herein, with limited exceptions in the past, federal antitrust authorities are only now addressing in a serious manner concerns about illegal collusion using digital algorithms.

This enforcement activity is occurring against the backdrop of ongoing, rapid growth in the digital sector. The global market for "digital transformation," which was valued at about $990 billion in 2024, is only getting larger, with an expected annual growth rate of about 24% through

[1] Diana L. Moss and David Hummel, Anticipating the Next Generation of Powerful Digital Players: Implications for Competition Policy, Am. Antitrust Inst. (Jan. 18, 2022), https://www.antitrustinstitute.org/wp-content/uploads/2022/01/NextGenDigitalAAIReport.1.18.22-1.pdf.

2030.[2] This latest wave of growth and expansion is driven by the use of advanced technology, especially artificial intelligence (AI), and even further advancements in cloud capability.[3]

This report addresses a number of important issues around competition and AI that the Working Group believes the California Law Review Commission (CLRC) should consider in its Study B-750 deliberations. Importantly, the working group focused on competition issues in contexts where AI plays a significant role in determining *how firms compete*. These include markets where harmful strategic competition is facilitated by the use of AI and supporting cloud technology.

The report covers three major areas: (1) algorithmic collusion; (2) unilateral conduct; and (3) consolidation. Given the complexities of the digital sector, especially economic features that make them prone to concentration, a final section discusses the merits of a digital sector regulator. It includes specific recommendations in appropriate cases and soft policy recommendations that are equally important for the CLRC to consider in advising the Legislature. It is important to note that not all members of the Working Group agree with every recommendation and soft policy suggestion in this paper, but nonetheless, the Working Group believes it is worth raising differing view points.

II. Algorithmic Collusion

One aspect of AI which has generated considerable antitrust litigation is the claim that the use of the same algorithmic pricing software program by multiple competitors in the same market constitutes illegal price-fixing within the meaning of Section 1 of the Sherman Act. Such claims have been asserted against major players in various industries, including the residential multi-family apartment industry, the hotel/hospitality industry, and the healthcare industry.

A. The RealPage Inc. Case

One significant case in this regard is *In Re RealPage Inc., Rental Software Antitrust Litigation*.[4] This case challenges the use of RealPage's revenue management software by over 40 owners/managers of multi-family apartments. In denying the defendants' motion to dismiss as to the multi-family operators, the court noted that RealPage required each user to submit confidential pricing and occupancy data, which was then utilized in RealPage's algorithm to spit out pricing recommendation for each rental unit with the goal of increasing revenue.

Further, RealPage employed aggressive methods to ensure that the multi-family operators accepted its pricing recommendations. The Antitrust Division of the U.S. Department of Justice (DOJ) filed a Statement of Interest expressing its view that it is per se unlawful under Section 1 when, as alleged, competitors knowingly combine their sensitive nonpublic pricing and supply

[2] Digital Transformation Market by Business Transformation, By Business Technology – Global Forecast to 2030, Markets and Markets, https://www.marketsandmarkets.com/Market-Reports/digital-transformation-market-43010479.html. Digital transformation refers to the comprehensive process of integrating digital technologies into all aspects of a business or organization, fundamentally changing how it operates and delivers value to customers.
[3] Jeffrey Erickson, The Role and Benefits of AI in Cloud Computing, OCI (June 21, 2024), https://www.oracle.com/artificial-intelligence/ai-cloud-computing/.
[4] 2023 U.S. Dist. LEXIS 230200 (M.D. Tenn. Dec. 28, 2023).

information in an algorithm they rely on in making pricing decisions with the knowledge and expectation that other competitors will do the same.[5]

The court ruled that the plaintiffs' allegations at least plausibly (for motion to dismiss purposes) set forth a conspiracy within the meaning of Section 1 since by co-mingling their sensitive pricing and supply data within RealPage's revenue management software, horizontal competitors could be said to have conspired to fix prices within their respective rental housing markets. The case is proceeding in the discovery phase.

In addition to the private action discussed above, the DOJ and certain State Attorneys General, including California, recently filed their own antitrust action against RealPage, alleging that RealPage obtains and combines confidential information from apartment landlords to make recommendations as to rental rates which are higher than the rates would be in a competitive market, in violation of Section 1 of the Sherman Act.[6]

B. Other Important Case Developments

A similar case has been filed in federal court in Seattle against Yardi, another software provider in the multi-family apartment industry, challenging the use of Yardi's algorithmic pricing software called RentMaximizer. The case is *Duffy v. Yardi Systems*, case No. 2:23-cv-01391 (W.D. Wash.). The suit alleges that use of the algorithmic pricing software allows apartment owners who should be competing against each other to effectively coordinate rental rates.

Significantly, the DOJ and the FTC filed a Statement of Interest (ECF No. 149) expressing their view that sharing confidential pricing information with a common pricing agent through software can be the equivalent to directly sharing that information with a competitor; that competitors jointly delegating their pricing decision-making to a common algorithm constitutes "concerted action" within the meaning of Section 1; and that such actions constitute illegal price-fixing even if the apartment owners retain some authority to deviate from the algorithm's recommendations. Defendants' motion to dismiss is still pending, as of this writing.

Several cases have also challenged the use of algorithmic pricing software in the hotel/hospitality industry. Distinguishing the *RealPage* case, a Nevada court dismissed the Section 1 claim against hotel operators on the Las Vegas Strip in *Gibson v. Cendyn Group LLC*.[7] In that case, plaintiffs challenged the utilization of Cendyn's Rainmaker revenue management software, alleging that the hotels engaged in illegal price-fixing.

In contrast to the *RealPage case,* the complaint did not specifically allege that the algorithm relied on confidential information or that the hotel operators were essentially required to accept the recommendations made by the pricing algorithm. The court made clear that consulting public sources to see your competitor's rates in reaching decisions about how to price hotel rooms does not violate the Sherman Act.

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[5] DOJ Statement of Interest, filed Nov. 15, 2023.
[6] *U.S. v. RealPage Inc*., case no. 1:24-cv-00710, in the U.S. District Court for the Middle District of North Carolina.
[7] 2024 U.S. Dist. LEXIS 83547 (D. Nev. May 8, 2024).

Motions to dismiss are still pending in a similar case also challenging the use of Cendyn's Rainmaker software by Atlantic City hotels.[8] There, the DOJ and FTC filed a Statement of Interest (ECF No. 96) stating that, in their view, usage of pricing algorithms could still be unlawful even when co-conspirators retain some pricing discretion and do not communicate directly with each other.

With respect to healthcare, a number of health care providers, including one of the largest hospital chains in the country, have accused MutiPlan, a data analytics company that provides out-of-network cost management services to health insurers of conspiring to suppress reimbursements as a result of its pricing algorithms. Among the cases which have been filed are *Adventist Health Systems v. Multiplan, Inc*., *Allegiance Health Management Inc. v. Multiplan, Inc*., and *Curtis F. Robinson v. Multiplan, Inc*.[9] The federal cases were recently centralized in the Northern District of Illinois in *In re MultiPlan Health Insurance Provider Litigation*.[10]

No substantive decisions have been rendered yet in these cases. However, in a case against MutiPlan filed in California state court under California's antitrust law, the trial court just dismissed the complaint, finding that the out-of-network reimbursements paid to the plaintiff health care provider was not a discrete product or service which could be subject to an illegal price fixing agreement. The court accepted the defendants' argument that reimbursement for out-of-network service is part and parcel of a health insurance policy and not a standalone product or service. The case is *VHS Liquidating Trust v. MultiPlan Corp.*[11]

C. Legislative Developments

On the federal legislative front, Sen. Amy Klobuchar introduced the "Preventing Algorithmic Collusion Act of 2024" in January 2024.[12] The proposed legislation would demand greater transparency by requiring business to disclose information concerning the use of pricing algorithms and prohibit companies from using "nonpublic competitor data" to inform or train a pricing algorithm.

In July 2024, the San Francisco Board of Supervision enacted the first city-wide prohibition on the use of algorithmic pricing to set rents.[13] The new ordinance makes it unlawful to sell or license any algorithmic device which sets, recommends, or advises on rents or occupancy levels for residential dwelling units in San Francisco and also prohibits landlords from using such algorithmic devices when setting rents or occupancy levels.

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[8] See *Cornish-Adebiyi v. Caesars Entertainment*, case No. 1:23-cv-02536 (D. N. J.).
[9] *Adventist Health Systems v. Multiplan, Inc*., case No . 1:23-cv-07031 in the Southern District of New York, *Allegiance Health Management Inc. v. Multiplan, Inc*., case no. 1:24-cv- 03223 in the Northern District of Illinois, and *Curtis F. Robinson v. Multiplan, Inc*. case no. 3:24-cv-02993 in the Northern District of California. The federal cases were recently centralized in the Northern District of Illinois *In re MultiPlan Health Insurance Provider Litigation*, MDL No. 3121 (N.D. Ill.).
[10] MDL No. 3121 (N.D. Ill.).
[11] Case No. CGC-21-594966 (San Francisco Superior Court).
[12] Senate Bill No. 3686, 118th Congress (2023-2024).
[13] *See* American Economic Liberties Project, "San Francisco Passes First-in-Nation Municipal Ban on Rent-Fixing Software, (July 30, 2024) https://www.economicliberties.us/press-release/san-francisco-passes-first-in-nation-municipal-ban-on-rent-fixing-software/

As discussed in other working group reports, The Cartwright Act generally prohibits any combinations or agreements which unreasonably restrain trade or fix or control prices. As currently interpreted by the courts, the Cartwright Act requires a "combination" or "concerted action" between 2 or more independent economic entities. Given the increasing use of software programs containing or relying on pricing algorithms, the Legislature might consider declaring that the "concerted action" requirement of the Cartwright Act encompasses multiple competitors that knowingly use the same or similar revenue management software programs containing or relying on pricing algorithms that utilize nonpublic competitor information to train or inform any price recommendations.

Consistent with the position of the DOJ in the cases referred to above, the Legislature might also clarify that direct communications are not required to show proof of a "combination" or "concerted action" among competitors, as the Cartwright Act covers tacit *as well as* express agreements. This is in accord with the position of the DOJ in the above-referenced cases that Section 1 of the Sherman Act prohibits "tacit agreements"—that is where one co-conspirator invites participation in an illegal price-fixing scheme and other co-conspirators act in accordance with the scheme, showing acceptance through a course of conduct.

Further, the Legislature might make clear that the Act prohibits competitors from "delegating key aspects of pricing decision making to a common entity, even if the competitors never communicate with each other directly." Further, to refute the argument that there can be no actionable claim of price fixing because the algorithm's recommendations are not binding, the Legislature could declare that, under the Cartwright Act, "an agreement among competitors to fix the *starting point* of pricing is per se unlawful, no matter what prices the competitors ultimately charge."

III. Restrictive Unilateral Conduct That Relies on or Deploys AI

As discussed above, AI and AI based algorithms can be used to facilitate collusion among multiple competitors or market participants at different parts of the supply chain. Beyond AI potentially exacerbating collusion, an additional concern is the possibility of a monopolist using AI as a tool to further entrench itself and stifle legitimate competition. While we are not yet aware of any cases brought against firms who use AI unilaterally to harm competition, it is important to note that AI could more easily enable anticompetitive unilateral conduct by better identifying opportunities for illegal tying, self-preferencing, bundling, and other types of conduct that can be used by a monopolist to exclude competition.

AI could be used by a monopolist to engage in self-preferencing, identifying circumstances in which the monopolist's own products should be displayed or promoted over rivals' products, and make it more difficult for consumers to recognize sponsored recommendations while searching online.[14] Finally, AI, if used by a monopolist to autonomously set prices, could set predatory, exclusionary, or discriminatory pricing that harms competition.

[14] United Kingdom Competition & Markets Authority, "Algorithms: How they can reduce competition and harm consumers," (January 19 2021) https://www.gov.uk/government/publications/algorithms-how-they-can-reduce-competition-and-harm-consumers/algorithms-how-they-can-reduce-competition-and-harm-consumers#theories-of-

While there are serious issues with a monopolist using AI as a competitive weapon, many of the above concerns could be lessened if the Legislature adopts the suggestions made by the Single Firm Conduct Working Group, as many of their suggestions would address anticompetitive concerns flowing out of unilateral conduct, including the use of AI.[15]

The Single Firm Conduct Working Group tasked by the California Law Revision Commission submitted a detailed report including possible statutory language the legislature could adopt.[16] This proposal would strengthen California law significantly and make it more effective than the federal antitrust law governing unilateral conduct. Protecting the people of California from anticompetitive conduct by economically powerful firms would increase welfare. In addition, prohibiting such conduct will protect entrepreneurs and growing startups who want to challenge and replace incumbent firms with their own innovative products and services.

Importantly, the law proposed by the working group would apply to all firms and therefore automatically cover digital platforms, AI, and any other innovation that comes along in the future. This breadth protects people and innovators better than a law targeted only at digital platforms or AI because it avoids the litigation and (likely) years of delay fighting over the question of whether a firm is "digital" or not.

Digital technologies of all kinds rely heavily on interoperability across platforms, networks, and complements. But the jurisprudence that has built up in the federal courts on this topic permits an economically powerful firm to disadvantage and exclude rivals using interoperability tactics. It is therefore this Working Group's recommendation that the Legislature explicitly reject the federal jurisprudence in this area and adopt a new law addressing unilateral conduct—as more fully addressed in the Single Firm Conduct Working Group report.

IV. Monitoring for Harmful Consolidation Involving Cloud and Artificial Intelligence

Section 7 of the Clayton Act works to stop harmful mergers that are likely to substantially lessen competition before they occur.[17] The statute covers harm that is incipient, or not fully realized. This Congressionally-mandated power to block mergers before harm to competition can be realized is very important when it comes to the digital sector given that growth in this space is primarily through acquisition.[18]

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harm; https://dp-reg.gov.au/sites/default/files/documents/2023-11/Working%20paper%202%20Examination%20of%20technology%20-%20Large%20Language%20Models.pdf; Staff in the Bureau of Competition & Technology, FTC, "Generative AI raises Competition Concerns," (June 29, 2023) https://www.ftc.gov/policy/advocacy-research/tech-at-ftc/2023/06/generative-ai-raises-competition-concerns

[15] To be clear, AI, in the context of unilateral or single-firm conduct, should be looked at as a tool that can either help advance or hinder competition.

[16] Aaron Edlin, Doug Melamed, Sam Miller, Fiona Scott Morton and Carl Shapiro, Single-Firm Conduct Working Group, California Law Review Commission Study of Antitrust Law (Jan. 24, 2024), https://faculty.haas.berkeley.edu/shapiro/singlefirmCLRC.pdf. It should be noted that two members of the Single-Firm Conduct Working Group are also members on this AI and Competition Working Group.

[17] U.S. Dept. of Justice and Fed. Trade Commn., Merger Guidelines (Dec. 18, 2023), https://www.justice.gov/d9/2023-12/2023%20Merger%20Guidelines.pdf, at 1 ["2023 Merger Guidelines].

[18] Moss and Hummel, supra note 1.

For example, a leading study of growth by acquisition in the digital sector created samples of public and private digital firms and a control group of non-digital firms operating in the same markets.[19] Analysis shows that digital firms are both more acquisitive and more valuable than non-digitals. Acquisitiveness for digital firms is moderately and positively correlated with a company's value, as measured by market capitalization or funding levels.

The digital sector's voracious appetite for acquisition has myriad implications for competition enforcement. The cycle of expansion of the largest and oldest digital ecosystems—Amazon, Apple, Google, Meta, and Microsoft—began in mid-1990s, accelerated around 2005, and peaked in 2014-15.[20] Some have opined that the ramp-down in acquisitions since 2014-15 could signal the maturity of the largest digital ecosystems, due to natural limits on company size, the availability of suitable takeover targets, or escalating antitrust risk.

The digital sector is now in an even newer and different phase of transformation. As the demand for cloud infrastructure and cloud computing capability increases, more cycles of growth through acquisition may occur in these areas. AI plays a central role in driving the growth of cloud due to the high computing demands imposed by generative AI models. One survey of companies reveals that almost 50% are currently using generative AI public cloud services, while another almost 40% are experimenting with their use.[21]

The symbiosis between cloud and AI and its impact on economic activity and commence creates a powerful flywheel effect. Cloud computing providers rely on AI to power the automated systems that deliver information technology services and software as a service (SaaS) applications, while cloud computing supports AI by offering essential infrastructure to rapidly expand its deployment.[22]

The U.S. cloud computing market was valued at almost $700 billion in 2024 and is expected to reach $1.45 trillion in 2029, or an annual rate of growth of about 16.5%.[23] There are three major cloud players in the U.S., with a fringe of smaller firms. Amazon Web Services has a market share of about 31%, Microsoft Azure's market share is 25%, and Google Cloud's share is 11%, bringing the share of the top three to about 67%.[24] Firms with smaller shares include IBM, Oracle, Salesforce, and Alibaba Cloud, resulting in a market of 1,750 HHI or just below the highly concentrated level.[25]

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[19] *Id.*
[20] Data on acquisitions sourced from Crunchbase.com. *See also*, Non-HSR Reported Acquisitions by Select Technology Platforms, 2010-2019: An FTC Study, Fed. Trade Commn. (Sept. 2021) https://www.ftc.gov/reports/non-hsr-reported-acquisitions-select-technology-platforms-2010-2019-ftc-study.
[21] 2024 State of the Cloud Report, Flexera (2024), https://info.flexera.com/CM-REPORT-State-of-the-Cloud?utm_source=google&utm_medium=ppc&utm_content=state_of_cloud_extension&lead_source=PPC&cq_cmp=21426659424&cq_term=flexera&cq_plac=&cq_net=g&cq_plt=gp&gad_source=1.
[22] Jeffrey Erickson, The Role and Benefits of AI in Cloud Computing, OCI (June 21, 2024) https://www.oracle.com/artificial-intelligence/ai-cloud-computing/.
[23] Cloud Computing Market Size & Share Analysis - Growth Trends & Forecasts (2024 - 2029) Mordor Intelligence, https://www.mordorintelligence.com/industry-reports/cloud-computing-market.
[24] Felix Richter, Amazon Maintains Cloud Lead as Microsoft Edges Closer, Statista (May 2, 2024) https://www.statista.com/chart/18819/worldwide-market-share-of-leading-cloud-infrastructure-service-providers/.
[25] 2023 Merger Guidelines, supra note 18.

While the shares of the top three cloud providers, and their rank order, have remained consistent over time, there are important dynamics that reveal more about competition in the cloud market.[26] For example, Google Cloud has long scrapped for turf to expand its cloud market share.[27] Amazon Web Services' cloud capability has resulted largely from internal R&D and growth, not acquisition.[28] And Microsoft's Azure is under the antitrust microscope for investments in leading AI firms and licensing practices that are alleged to lock in legacy cloud customers.[29] Moreover, there are recent antitrust probes into the control of AI semiconductor chips, and ownership stakes of major cloud providers in leading AI developers.[30]

In light of the meteoric growth of the first-generation digitals, and the more recent cycle of expansion in cloud and AI, a new study has identified AI-related acquisitions by the largest cloud providers, as well as AI-specialized firms.[31] This search identified additional companies, including Qualcomm, Meta, Intel, NVidia, and Genesys.[32] Collectively, these companies made almost 280 AI-related acquisitions between 2005-2023, with a ramp up in activity around 2011 and a peak around 2018-2019. This occurs four to five years after the peak in acquisitions by the first-generation digital ecosystems in 2014-15, signaling a separate, discrete cycle of expansion in AI.

Much like the cycle of M&A that resulted in the expansion of the first-generation digital ecosystems, merger enforcement in cloud and AI has been very low. HSR data reveal that, as a percentage of total deals cleared to the agencies for review, the challenge rate is only about 3.6% in a key segment of the digital sector, as compared to the 15% average across all sectors of the economy.[33] The low merger challenge rate does not appear to be the result of a lack of effort. The "second request" rate is 25% for the digital sector, higher than the 20% rate across all sectors. The agencies, therefore, took close early-stage looks at digital deals but challenged very few.[34]

When the recent wave of merger enforcement did increase, it was decades after the largest digital ecosystems had reached a peak in acquisition activity. However, government merger challenges in Meta-Within, Microsoft-Activision, and UnitedHealth-Change Healthcare were unsuccessful. Competition inquiries into cloud and AI consolidation have begun only recently. These inquiries

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[26] Diana L. Moss, The State of Cloud Technology Markets: Challenges for Competition, CPI Antitrust Chronicle (Aug. 2023), https://www.pymnts.com/wp-content/uploads/2023/08/4-the-state-of-cloud-technology-markets-challenges-for-competition-Diana-LMoss-1.pdf.
[27] See, e.g., Mark Haranas, AWS, Google, Microsoft Battle Over $76B Q1 Cloud Market Share, CRN (May 6, 2024), https://www.crn.com/news/cloud/2024/aws-google-microsoft-battle-over-76b-q1-cloud-market-share
[28] Moss, supra note 26.
[29] Lauren Leiner, Microsoft has nine months to stop another antitrust battle from escalating, The Verge (Jul. 10, 2024), https://www.theverge.com/2024/7/10/24195772/microsofts-cloud-licensing-deal-cispe-eu-antitrust.
[30] *See, e.g.,* David McCabe, U.S. Clears Way for Antitrust Inquiries of Nvidia, Microsoft and OpenAI, New York Times (June 5, 2024), https://www.nytimes.com/2024/06/05/technology/nvidia-microsoft-openai-antitrust-doj-ftc.html.
[31] Diana L. Moss, Framing a Competition Policy for the Digital Sector, Progressive Policy Institute (forthcoming).
[32] Data sourced from Crunchbase.com.
[33] Data obtained from Annual Reports to Congress Pursuant to the Hart-Scott-Rodino Antitrust Improvements Act of 1976, https://www.ftc.gov/policy/reports/policy-reports/annual-competition-reports; see Table X (detail on NAICS Code 518), 2001-2022. The challenge rate is for NAICS code 518, web search portals and data processing services.
[34] To be clear, the challenge rate and the second request rate are not based off the total HSR filings, but rather the clearance rate granted to FTC or DOJ referenced in Exhibit A (Statistical Tables) in the annual competition reports.

focus on both horizontal and vertical integration in all parts of the AI supply chain. Potential pathways for restraining competition include entrenching a dominant position in a critical AI-related market or strengthening incentives to deploy AI for the purpose of foreclosing rivals from access to important input or distribution markets.

The working group suggests that the CLRC focus on policy and procedural tools that give California antitrust enforcers a leg up in more closely monitoring cloud and AI markets for potentially harmful strategic consolidation. Early information-gathering through simultaneous notification of transactions to federal and state enforcers under the Hart Scott Rodino Act ("HSR") will be an important tool in furthering this goal. Monitoring for transactions that fall below the HSR reporting thresholds is also an important way to gauge the pace of consolidation and "serial" acquisitions that could facilitate a dominant market position. This work could be housed in the California Department of Justice's Antitrust Law Section, similar to the proposal suggested in Section V below.

V. Considering a California Digital Regulator

It has been argued that the US did not adequately enforce antitrust laws with respect to digital platforms for two decades—with the result that several dominant digital platforms now have entrenched market power. One approach to address the power of these dominant platforms might be for the Legislature to consider enacting a digital-specific regulatory regime. While not everyone in the Working Group agrees with the need for a digital-specific regulatory regime, it is worth addressing how European counterparts have addressed the rise of digital ecosystems.

Both the EU's Digital Markets Act ("DMA") and the actions of the UK's Digital Markets Unit provide examples for possible digital regulation regimes. The idea of regulation of this type is to require platforms to provide more access to business users and end users, and to use regulation as a tool to divide digital platform surplus in a way that reflects the contributions of all parties.

The Legislature could consider setting out goals to: (1) regulate existing platforms to promote competition *on* the platforms; and (2) look forward and regulate to minimize future anticompetitive conduct to allow competition *for* the platform. In other words, freeing the next generation of platforms from exclusionary conduct by incumbents so that they can grow. The Legislature can then empower the regulator to identify platforms subject to the regulations and enforce them.

Elements of the DMA that might be useful for California to consider include: (1) rival app stores allowed access to mobile OS; (2) mobile OS must provide the same functionality for third-party apps as its own; (3) reader apps must be available for all developers; (4) developers may link out and distribute content on the web; (5) consumers may port their data out of a platform; (6) real-time continuous data feed of their own activities is available to end users and business users; and (7) ranking and ordering results must be fair and unbiased.

Note that the digital gatekeepers in Europe are already complying with these rules. There would be almost no incremental technical cost for the covered platforms to comply with the same rules in California. A useful concept that is not specifically covered in this list is interoperability. In

many settings, gatekeeper interoperability will raise welfare and competition concerns, and a regulator may want to mandate it for this reason.

The United Kingdom also has a framework for a regulator which California could consider adopting in part. The basic outline of the UK scheme is a regulator which identifies problematic firms, problematic conduct, and a solution to protect competition and consumers. In California, this would be achieved by creating a new section within the California Department of Justice's Antitrust Division. When concerns are raised by the Legislature, this group would be tasked with carrying out a market study to determine if a digital platform had entrenched market power that was strategically important to a sector of the economy.

The study would then determine if there was harm to competition or consumers that needed to be remediated. If so, there would be a second stage (called a Market Investigation in the UK) of analysis in which the regulator develops solutions. These could include protections for consumers, prohibitions on certain types of contracts, requirements for access by business users, portability of data, and the like. The regulator, however, the Legislature chose to constitute it, would then enforce the code of conduct.