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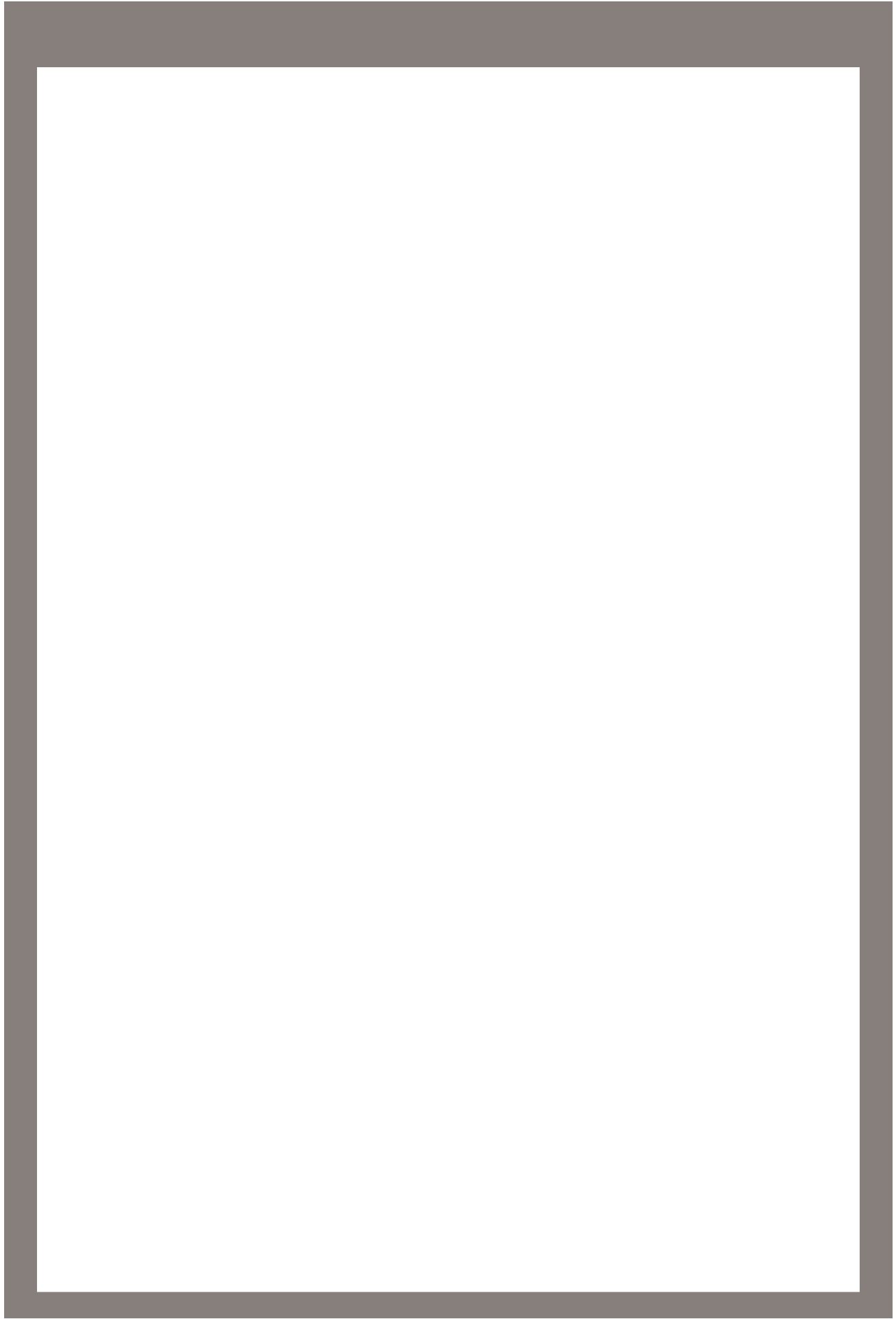
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ARTICLE

DATA-DRIVEN UNFAIR COMPETITION IN DIGITAL MARKETS

ANCA DANIELA CHIRITA*

This article expands the controversial catalogue of abusive practices to account for new types of data-driven unfair practices, such as data leveraging and combination, behavioral and personalized discrimination, excessive and algorithmic pricing, and the misuse of data, due to inherent conflicts of interest, driven by platform-based competition. It advances a novel understanding of the abuse of data, based on a human-centric approach to competition law. The latter applies fundamental human-rights principles to competition law, including non-discrimination, equality of opportunity, and the value of fairness for both consumers and entrepreneurs, as well as the freedoms of choice, consent, and entrepreneurial action, and consumers' right to economic privacy. Transitioning from the above evolutionary trajectory, which moves from economic dependence on the power of gigantic monopolies toward the diminishing power of gatekeepers, this article raises pressing concerns about the power of predictive analytics to accomplish the yet unaccomplished mission of surveillance capitalism, including human dependence on robotics, machine learning, and manipulative algorithms.

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INTRODUCTION

This article offers a comprehensive analysis of the new regulatory approach to digital markets. It explores the theoretical, jurisprudential, and historical underpinnings of selected key concepts of economic dependence, procedural versus substantive unfairness, and their evolutionary trajectory from the digital-monopoly problem to the gatekeeper age.

This article substantively expands the controversial catalogue of abusive practices to account for new types of data-driven unfair practices, such as data leveraging and combination, behavioral and personalized discrimination, excessive and algorithmic pricing, and the misuse of data, due to inherent conflicts of interest, driven by platform-based competition.

Furthermore, this article contributes to and advances a novel understanding of the abuse of data, based on a human-centric approach to competition law. Applying fundamental human-rights principles to competition law, a human-centric approach to competition law focuses on non-discrimination, equality of opportunity, and the value of fairness for both consumers and entrepreneurs, as well as the freedoms of choice, consent, and entrepreneurial action, and consumers' right to economic privacy. Transitioning from the above evolutionary trajectory, which moves from economic dependence on the power of gigantic monopolies toward the diminishing power of gatekeepers, this article raises pressing concerns about the power of predictive analytics to accomplish the yet unaccomplished mission of surveillance capitalism, including human dependence on robotics, machine learning, and manipulative algorithms.

To this end, the structure of this article is as follows. First, it explores the semantic differences introduced by gatekeepers and wider regulatory goals under the Digital Markets Act and its intersection with the Digital Services

Act. Second, it analyzes the substantive arguments against economic dependence, using a critique of the theories of compressed “mologopolies” and “dataopolies”. Thirdly, moving on from contractual to competition unfairness, this article expands the catalogue of novel unfair practices alongside traditional ones, such as tying and fair, reasonable, and non-discriminatory terms of access to data. Ultimately, it briefly considers the regulatory defenses, exceptional circumstances, and remedies. Finally, it summarizes the overall research findings.

THE REGULATORY APPROACH TO DIGITAL MARKETS: ARE GATEKEEPERS THE NEW KIDS ON THE BLOCK?

In recent years, competition authorities around the world have concentrated their efforts on the *anticompetitive* practices of dominant digital-technology corporations. The European Union (hereinafter (“Union”)) recently adopted a regulatory approach to *unfair* competition practices, the Digital Markets Act (“DMA”),¹ which applies to online offerings of “core” gatekeeper platforms.² Some platforms may be offered free of charge, as in the case of search engines, browsers, social networks, videos, and interpersonal communications, while others, including intermediation, operating or cloud-computing systems, advertising networks, exchanges and intermediation, and virtual assistants, must be paid for.³ Such gatekeepers must not engage in unfair practices. By embracing a neutral definition of core platforms, the DMA has sought to include futuristic means of technological progress, such as TV and vehicle devices.⁴ Subject to further amendments,⁵ the DMA may add new services or remove existing ones from the prescriptive list above.

Before the regulatory approach to digital markets was introduced, if any of the above corporations had been identified as dominant, the competition authority would have tested the case, looking for possible abuse of their dominant position. The regulatory approach recognizes corporations as “gatekeepers” if they have a significant impact on the market.⁶ Terminologically,

* Durham University Law School, Dr. iur. (Germany), Associate Professor (Reader) of Competition Law, Durham Institute for Data Science, UK. I would like to thank Jack Gould, Brianna Jordan, and the editorial team at BU Journal of Science and Technology for their editorial suggestions.

¹ Regulation (EU) 2022/1925 of the European Parliament and of the Council on Sept. 14, 2022 on Contestable and Fair Markets in the Digital Sector and Amending Directives (EU) 2020/1828 (Digital Markets Act) 2022 O.J. (L 265) [hereinafter DMA].

² *Id.* at para. 2.

³ *Id.* at para. 14 and art. 1 (3).

⁴ *Id.* at para. 14.

⁵ *Id.* at art. 19.

⁶ See *Proposal for a Regulation of the European Parliament and of the Council on Contestable and Fair Markets in the Digital Sector (Digital Markets Act)*, at art. 2, COM (2020) 842-final (Dec. 15, 2020) [hereinafter *Proposal for DMA*].

gatekeeper status is tantamount to a stable market-leadership position, but without enjoying a monopolistic position.⁷ This means that the DMA may target market players that have not yet reached a dominant position. The addressees are large undertakings⁸ with significant market power, not small or medium-sized enterprises. Ultimately, the DMA targets a “small number” of large undertakings with “considerable” economic power.⁹

Under public international law – Union competition law applies when it is foreseeable that the conduct of a transnational undertaking will have “an immediate and substantial” effect within the Union.¹⁰ The extra-territorial reach of the DMA is unmistakable.¹¹ It applies to transnational gatekeepers that operate in the Union, offering any of the above services cross-border, i.e., in at least three Member States of the Union, but irrespective of their place of establishment or residence.¹²

Finally, cross-border trade in digital services should benefit consumers.¹³ The addresses of the supra-national dimension of unfair competition within and impacting the Union are gatekeepers who enjoy an “entrenched and durable” position or one that is foreseeable in the near future.¹⁴ A gatekeeper must have a “significant” impact on the internal market, through a core platform, which is an “important” gateway to the Internet¹⁵ or the Internet of

⁷ *Id.* *Proposal for DMA*; see also ORG. FOR ECON. COOP. AND DEV. (OECD), OECD HANDBOOK ON COMPETITION POLICY IN THE DIGITAL AGE 14 (2022), <https://www.oecd.org/daf/competition-policy-in-the-digital-age> [hereinafter OECD HANDBOOK] (clarifying how digital platforms act as vertical gatekeepers between downstream businesses and their customers and through conglomerates).

⁸ DMA, *supra* note 1, at para. 24. For smaller and medium-sized businesses, careful consideration should be given as to “whether such an undertaking would be able to substantially undermine the contestability of the core platform services. . .”.

⁹ *Id.* at para. 3.

¹⁰ Case AT-40099, Google Android, Eur. Comm’n Comp. Dec. para. 1363 (July 18, 2018) [hereinafter Google Android].

¹¹ *Proposal for DMA*, *supra* note 6, at art. 1 (2); DMA, *supra* note 1, at para. 17 and art. 1 (2).

¹² *Id.*

¹³ DMA, *supra* note 1, at para. 1.

¹⁴ See *Proposal for DMA*, *supra* note 6, at para. 21 and art. 3 (referring to the likely characteristics for an entrenched and durable position); DMA, *supra* note 1, at paras. 15, 21, 25. The adopted DMA clarified that both relatively high growth rates and market capitalization were indicators of a foreseeable position.

¹⁵ Similarly, and due to its “super dominant” position, Google was credited with being a “gateway to the Internet” and placed under a “stronger obligation” to not distort competition. See Case T-612/17, Google LLC v. European Comm., ECLI:EU:T:2021:763, ¶ 183 [hereinafter Google Shopping]; JERROLD NADLER, COMM. ON THE JUDICIARY, AND DAVID N. CICILLINE, SUBCOMM. ON ANTITRUST, COM., AND ADMIN. L., 117TH CONG., INVESTIGATION OF COMPETITION IN DIGITAL MARKETS, MAJORITY STAFF REPORT *passim* (Comm. Print 2022), (<https://democrats->

Things, enabling businesses to reach out to consumers.¹⁶ Furthermore, gatekeepers are engaged in a fast-track designation process.¹⁷ In the event that they achieve a foreseeable entrenched and durable position, their gatekeeper status may be only temporary.¹⁸

In essence, a semantic nuance is all that differentiates between a gatekeeper's *durable* position and a monopolist's *dominant* position. The former seeks to achieve a quiet monopolistic life,¹⁹ while the latter aims to consolidate its monopoly status. A dominant undertaking has a "special responsibility"²⁰ to not distort normal competition or abuse its position by recourse to methods other than meritocratic competition, to the detriment of consumers. Due to their superior bargaining power,²¹ gatekeepers have a similar special responsibility, namely, not to engage in acts of unfair competition against their rivals or users. Paradoxically, a period of three years or more is required for a gatekeeper to have a significant impact;²² for a monopolistic position, however, the period is two years.²³

THE WIDER REGULATORY GOALS OF THE DMA

At the heart of the DMA lies the wider political goal of the European Commission ("EC") – the creation of a fair and competitive digital economy. This goal signals that the Union has an ambitious prospect – to challenge Silicon Valley's technology giants by encouraging competition that will lead to the development of innovative technologies and counteract "negative social and economic implications".²⁴ Aligned with the longstanding Union goal of ensuring the proper functioning of the internal market and its continued

judiciary.house.gov/uploadedfiles/competition_in_digital_markets.pdf) [hereinafter INVESTIGATION]. This investigative report was originally released in October 2020, adopted in April 2021, and published in July 2022 (referring to the Google browser as a critical gateway to the Internet, at 15).

¹⁶ See DMA, *supra* note 1, at para. 17 and art. 3 (1).

¹⁷ *Id.* at para. 16 and art. 4 (2).

¹⁸ *Id.* at para. 74.

¹⁹ See J.R. Hicks, *Annual Survey of Economic Theory: The Theory of Monopoly*, *ECONOMETRICA* (1935), reprinted in READINGS IN PRICE THEORY 361, 369 (Kenneth E. Boulding & George J. Stigler eds., 1951) ("The best of all monopoly profits is a quiet life.").

²⁰ Google Android, *supra* note 10, ¶ 729, 732.

²¹ INVESTIGATION, *supra* note 15, at 390 (recommending banning the abuse of superior bargaining power when dealing with monopolistic leveraging, predation, tying, self-preferencing, and with product design).

²² See DMA, *supra* note 1, at para. 21.

²³ See Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings, 2009 O.J. (C 45), at footnote 6.

²⁴ See DMA, *supra* note 1, at para. 6.

commitment to market integration, the DMA²⁵ has pledged to tackle both global and European business models and their algorithmic structures. By contrast, the proposed Bill for Ending Platform Monopolies in the United States aims not only to promote competition but also economic opportunity in digital markets by eliminating the conflict of interest between concurrent ownership and control of dominant platforms.²⁶ One could add that economic opportunity²⁷ endorses the fundamental values of non-discrimination, equality, and fairness.

The DMA seeks to strengthen the existing framework of competition law. Extending into unfair competition, this regulation may capture much more than has previously been possible under Article 102 of the Treaty on the Functioning of the European Union (“TFEU”). The U.S. Congressional Subcommittee on Antitrust, Commercial, and Administrative Law captured similar regulatory and judicial limitations in antitrust law.²⁸ These limitations were rooted in a narrowly perceived focus on consumer welfare, particularly involving price and output, and in under-enforcement,²⁹ especially (but not only) against mergers, due to a conservative interpretation of the antitrust laws.³⁰ The U.S. Sherman Act has been portrayed as the embodiment of an evolutionary dimension of free markets, capable of producing socially undesirable or unfair outcomes that should be challenged through governmental

²⁵ *Id.* at para. 7.

²⁶ Ending Platform Monopolies Act, H.R. 3825, 117th Cong. (2021).

²⁷ Drawing on narrowly defined antitrust goals, such as Bork’s efficiency paradox, Lande’s unjustified transfer of wealth from consumers to producers or May’s values of opportunity, efficiency, prosperity, justice, and freedom, see William E. Kovacic, *Public Choice and the Origins of Antitrust*, in FRED S. MCCHESENEY ET. AL., THE CAUSES AND CONSEQUENCES OF ANTITRUST 247 (Fred S. McChesney & William F. Shughart II eds., 1995); Robert H. Lande, *Wealth Transfers as the Original and Primary Concern of Antitrust: The Efficiency Interpretation Challenged* (1982), reprinted in THOMAS E. SULLIVAN, THE POLITICAL ECONOMY OF THE SHERMAN ACT: THE FIRST ONE HUNDRED YEARS 82 (Thomas E. Sullivan ed., 1991); ROBERT H. BORK, THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF 89 (2021).

²⁸ INVESTIGATION, H.R., *supra* note 15, at 391, 393.

²⁹ See e.g., JAMES BESSEN, THE NEW GOLIATHS: HOW CORPORATIONS USE SOFTWARE TO DOMINATE INDUSTRIES, KILL INNOVATION AND UNDERMINE REGULATION 33 (2022) (discussing Robert Bork’s *laissez-faire* influence on antitrust authorities and the resulting decline in standards for scrutinizing mergers and acquisitions); MAURICE E. STUCKE, BREAKING AWAY: HOW TO REGAIN CONTROL OVER OUR DATA, PRIVACY, AND AUTONOMY 69 (2022) (in favor of legislative changes for conglomerate mergers). The scarcity of U.S. antitrust cases before the courts indicates antitrust politics, see RICHARD A. POSNER, HOW JUDGES THINK 28 (2010) (on judges leaning toward the position of their own party).

³⁰ See e.g., AMY KLOBUCHAR, ANTITRUST: TAKING ON MONOPOLY POWER FROM THE GILDED AGE TO THE DIGITAL AGE 275-77 (2021) (on interpretation of the Clayton Act and the high bar to challenging mergers and acquisitions).

intervention.³¹

However, the DMA remains neo-liberally framed around openness and fairness so that digital markets can operate fairly,³² while newcomers are able to challenge existing gatekeepers. This position has been reiterated repeatedly, with an emphasis placed on key drivers, such as contestability and fairness.³³ Therefore, for the benefit of both businesses and consumers, open and fair competition have emerged triumphantly as twin goals.³⁴

The objective of Union competition law remains undistorted competition.³⁵ This objective embeds a functional approach to the ideal of fairness, while undistorted competition represents “a fair basis that is not adversely affected . . . by the unilateral conduct of dominant undertakings that abuse power . . . to restrict or eliminate competition.”³⁶ However, the judicial consensus continues to be that fair competition can lead to the departure of rivals;³⁷ aggressive or unfair methods mirror negative connotations of fairness, which remain the mission of unfair-competition law.

The DMA pursues complementary objectives of fairness and contestability.³⁸ Contestability disregards market outcomes in protecting other legal

³¹ See WILLIAM H. PAGE & JOHN E. LOPATKA, *THE MICROSOFT CASE: ANTITRUST, HIGH TECHNOLOGY, AND CONSUMER WELFARE* 3 (2007) (defining the evolutionary and intentional visions of free markets and explaining how the Sherman Act contains elements of both ideologies).

³² See Eleanor M. Fox, *The Efficiency Paradox*, in ROBERT PITOFSKY, *HOW THE CHICAGO SCHOOL OVERSHOT THE MARK: THE EFFECT OF CONSERVATIVE ECONOMIC ANALYSIS ON U.S. ANTITRUST* 86 (2008) (on the European values of openness, access, rivalry, and a competitive market structure).

³³ See DMA, *supra* note 1 at para. 2; see also ALISON JONES, BRENDA SUFRIN & NIAMH DUNNE, *JONES AND SUFRIN'S EU COMPETITION LAW: TEXT, CASES, & MATERIALS* 25-26 (7th ed. 2019) (on the contestable-market theory); ROBERT SKIDELSKY, *WHAT'S WRONG WITH ECONOMICS? A PRIMER FOR THE PERPLEXED* 126 (2021) (on the ideology of contestable markets being at the heart of market-led globalization).

³⁴ See e.g., *Proposal for DMA*, *supra* note 6, at para. 10 and art. 1 (1) (referring to the need for contestable and fair markets); see also *Proposition de Règlement du Parlement européen et du Conseil relative aux marchés Contestables et équitables dans le Secteur numérique (legislation sur le marchés numériques) 2020/0374 (COD)* [*Proposal for a Regulation of the European Parliament and of the Council on Contestable and Fair Markets in the Digital Sector (Digital Markets Legislation) 2020/0374 (COD)*], at paras. 7, 31, 32 (2020) 8722/22 (May 11, 2022) (discussing the need for both fairness and contestability in the markets for business users and end users); DMA, *supra* note 1, paras. 2, 13, 34 (on how a lack of contestability raises the prospect of unfair competition practices).

³⁵ Google Shopping, *supra* note 15, at ¶ 433.

³⁶ *Id.* at ¶ 433.

³⁷ *Id.* at ¶ 434; see also Case C-413/14 P, *Intel Corp. Inc. v. E.U. Comm'n*, ECLI:EU:C:2017:632, ¶ 133 (Sept. 6, 2017) [hereinafter *Intel Corp. Inc.*] (“Competition on the merits may, by definition, lead to departure from the market”).

³⁸ See generally, DMA, *supra* note 1.

interests.³⁹ However, there is only a semantic difference between contestability and the ideal of open, undistorted competition. This paradox reveals a far more protective DMA, which guards against both the unfairness of *exploitative* (i.e., business-to-consumer) and exclusionary (i.e., business-to-business) practices.⁴⁰

Union unfair competition law supplements competition law, the former applying “without prejudice” to the supra and national dimensions of the latter, including dominance and mergers.⁴¹ As in the case of an *ex-ante* regulatory approach to block exemptions, researchers can remain skeptical that the EC’s intervention against dominant gatekeepers will still be required, especially given certain enforcement overlaps, detailed below.

In accordance with the principle of proportionality, the outcome of the DMA should be fair prices for consumers and free choice for the users of online platforms.⁴² The principle of proportionality is also relevant to the

³⁹ DMA, *supra* note 1, at para. 11.

⁴⁰ In contrast to the traditional approach to market dominance under Art. 102 TFEU, the DMA protects both consumers and competitors against unfair competition, irrespective of the threshold of market dominance.

⁴¹ *See* DMA, *supra* note 1, at paras. 10, 12 and art. 1 (6) and (7) (on not running counter the Comm’n decisions) (“This Regulation should apply without prejudice to the rules resulting from other acts of Union law. . .”); *see, e.g.* REG 2016/679, 2016 O.J. (L 119) (ON THE PROTECTION OF NATURAL PERSONS WITH REGARD TO THE PROCESSING OF PERSONAL DATA AND ON THE FREE MOVEMENT OF SUCH DATA); REG 2019/1150, 2019 O.J. (L 186) (ON PROMOTING FAIRNESS AND TRANSPARENCY FOR BUSINESS USERS OF ONLINE INTERMEDIATION SERVICES); DIR 2002/58/EC, 2002 O.J. (L 201) (CONCERNING THE PROCESSING OF PERSONAL DATA AND THE PROTECTION OF PRIVACY IN THE ELECTRONIC COMMUNICATIONS SECTOR); DIR 2005/29/EC, 2005 O.J. (L 149) (CONCERNING UNFAIR BUSINESS-TO-CONSUMER COMMERCIAL PRACTICES IN THE INTERNAL MARKET and amending Dir 84/450/EEC, Dir 97/7/EC and 2002/65/EC (“Unfair Commercial Practices Dir”)); DIR 2010/13/EU, 2010 O.J. (L 95) (ON THE COORDINATION OF CERTAIN PROVISIONS LAID DOWN BY LAW, REGULATION, OR ADMINISTRATIVE ACTION IN MEMBER STATES CONCERNING THE PROVISION OF AUDIO-VISUAL MEDIA SERVICES); DIR 2015/2366, 2019 O.J. (L 130) (ON PAYMENT SERVICES IN THE INTERNAL MARKET, 2015 O.J. (L 337); DIR 2019/790 ON COPYRIGHT AND RELATED RIGHTS IN THE DIGITAL SINGLE MARKET); DIR 2019/882, 1993 O.J. (L 95) (ON THE ACCESSIBILITY REQUIREMENTS FOR PRODUCTS AND SERVICES); DIR 93/13/EC, 2019 O.J. (L 151) (ON UNFAIR TERMS IN CONSUMER CONTRACTS).

⁴² *See Proposal for DMA, supra* note 6, at para. 8 and art. 1; *see also*, DMA, *supra* note 1, at art. 2 (20). Under the DMA, “end users” and “business users” are defined distinctly. An “end user” is “any natural or legal person using core platform services other than a business user” whereas as “business user” is “any natural or legal person acting in a commercial or professional capacity using core platform services for the purpose of or in the course of providing goods or services to end users.” Thus, the business user is not necessarily the citizen consumer, but captures both businesses and consumers. *See Proposal*, at 14 and para. 2 (referencing to “zero” marginal costs to intermediate and final consumers

special goals of unfair competition, namely, public-policy concerns (including the public order), the protection of privacy due to the abundance of data,⁴³ the fight against fraudulent and deceptive unfair practices,⁴⁴ and the goal of fairness in commercial relations.⁴⁵ To address such unfair competition, it may be difficult to find legal avenues that would not restrict the business freedom of gatekeepers. The public-interest novelty lies in a human-centric approach to personal data and the fundamental human right to privacy.⁴⁶ Beyond the well-known economic freedom of choice for consumers, a solely human-rights-based approach to competition offers superior economic privacy. The human-centric approach to competition law can blossom by moving away from data-driven competition. Because competition law has focused too much on price reductions, the old paradigm has led to toxic levels of inhuman competition; therefore, the fight against unfair competition may help smaller rivals to flourish by reducing the intensity of toxic competition to an acceptable level of competition.⁴⁷

Similarly, the Proposal for a Digital Services Act (“DSA”)⁴⁸ has sought to

and opting for a functional approach to “users” transplanted from IT law); *see id. Proposal*, at para. 8 and art. 1 (stating the DMA aims to benefit consumers); *see Proposal*, at paras. 27, 30 (on the proportionality of an early intervention and the uncertainty of a case-by-case assessment of unfair practices); *see DMA*, at art. 2 (20) (defining “end users” as any natural or legal person acting in a commercial or professional capacity; hence, not necessarily the citizen consumer but capturing both businesses and consumers).

⁴³ The EU has conceptualized data protection as a privacy issue. By discussing data in terms of privacy, consumers have built varying degrees of acceptable disclosure of personal data. *See* KEVIN COATES, COMPETITION LAW AND REGULATION OF TECHNOLOGY MARKETS 365 (2011).

⁴⁴ DMA, *supra* note 1, at para. 35.

⁴⁵ Proposal for DMA, *supra* note 6, at para. 39.

⁴⁶ *See* European Convention on Human Rights, § 1, art. 8, *opened for signature* Nov. 4, 1950 (entered into force Sept. 3, 1953) (on the right to respect for one’s private life); Charter of Fundamental Human Rights of the European Union (Oct. 26, 2012) 2012 O.J. (C 326) 397 (Title II, Article 8 on the fair processing of personal data). Some contemporary commentary also calls for a human-centric approach to privacy, as opposed to traditional market solutions, such as relying on property, contract, or licensing, which cannot tackle “toxic” competition. *See* STUCKE, *supra* note 29, 116-17, 130 (2022). For a recent reference to Article 8 of the Charter of Fundamental Human Rights of the European Union, *see* Case C-252/21, *Meta Platforms Inc. v. Bundeskartellamt*, ECLI:EU:C:2022:704, ¶ 49 (Sep. 22, 2022) [hereinafter *Meta Platforms Inc.*].

⁴⁷ *See* Oles Andriychuk, ‘*Competition Overdose*’: *Curing Markets from Themselves? Ten Points for Discussion*, 41 *Legal Stud.* 519, 521-523 (2021) (reviewing MAURICE E. STUCKE AND ARIEL EZRACHI, *COMPETITION OVERDOSE: HOW FREE MARKET MYTHOLOGY TRANSFORMED US FROM CITIZEN KINGS TO MARKET SERVANTS* (2020)). Andriychuk discusses the differences between humane and inhumane competition or what he also considers the difference between good/noble and bad/toxic competition, differences further elaborated by Stucke and Ezrachi above at 42.

⁴⁸ *See generally*, Regulation (EU) 2022/2065 of the European Parliament and of the

counteract surveillance through online monitoring of consumers.⁴⁹ Surveillance limits the freedom to receive information, as well as the freedom of expression.⁵⁰ In addition, the idea of consumer surveillance⁵¹ has a negative impact on the economic freedom to run a business⁵² and the right to not be discriminated against under Article 14 of the European Convention on Human Rights.⁵³ Otherwise, curtailing economic freedoms could only harm consumer privacy through irresponsible and careless business conduct.

The DMA is especially welcomed now when the excessive collection of personal and sensitive data⁵⁴ has harmed consumer interests, including privacy, free choice, and the fundamental principle of non-discrimination and equality of opportunity.⁵⁵ Embracing an egalitarian ideal of justice,⁵⁶ the principle of fair opportunity nurtures meritocratic competition to support an inclusive society. However, market-driven free competition can only accomplish its mission to disperse a huge accumulation of economic power by preserving fundamental rights, such as equal liberties and fair equality of opportunity for consumers.⁵⁷ By definition, genuinely competitive digital markets do not need to compete for data-driven market power. Nonetheless, equality of opportunity for consumers can best be achieved when individual

Council of Oct. 19, 2022 on a Single Market for Digital Services and Amending Directive 2000/31/EC (Digital Services Act) 2022 O.J. (L 277) [hereinafter DSA].

⁴⁹ INVESTIGATION, *supra* note 15, at 15 (recognized Google Cloud as “surveillance” technology).

⁵⁰ See ANU BRADFORD, DIGITAL EMPIRES 270 (2023) (on fighting censorship to preserve democracy).

⁵¹ See SHOSHANA ZUBOFF, THE AGE OF SURVEILLANCE CAPITALISM: THE FIGHT FOR A HUMAN FUTURE AT THE NEW FRONTIER OF POWER 94 (2020) (on a surveillance-based economic order).

⁵² See Article 16 of the EU Charter of Fundamental Rights.

⁵³ European Convention on Human Rights, § 1, art. 14, *opened for signature Nov. 4, 1950* (entered into force Sept. 3, 1953) (“The enjoyment of the rights and freedoms set forth in this Convention shall be secured without discrimination on any ground such as sex, race, colour, language, religion, political or other opinion, national or social origin, association with a national minority, property, birth or other status.”).

⁵⁴ See STUCKE, *supra* note 29, at 62 (discussing the exploitation of personal data by online companies with significant market power); Viktoria H.S.E Robertson, *Excessive Data Collection: Privacy Considerations and Abuse of Dominance in the Era of Big Data*, 57 COMMON MKT. L. REV. 161, 161 (2020); see also OECD HANDBOOK, *supra* note 7, at 32 (discussing how excessive data collection might allow companies to offer better products, but also creates negative implications for consumer interests, privacy, freedom of speech, consumer choice, and more consumer values).

⁵⁵ See Consolidated Version of the Treaty on European Union, art. 2 TEU, Oct. 10, 2012, 2012 O.J. (C 326) 17 (discussing the values of freedom, democracy, equality, and respect for human rights).

⁵⁶ See JOHN RAWLS, A THEORY OF JUSTICE 86 (1971).

⁵⁷ See JOHN RAWLS, A THEORY OF JUSTICE: REVISED EDITION, *Id.* at 240–41 (1999).

consumers also take responsibility for their actions.⁵⁸ For example, consumers can exercise their free will by avoiding social media and protecting their own privacy. However, even equality of opportunity markets may eventually fail to provide a fair return to consumers through redistribution, due to “circumstances beyond their control.”⁵⁹ For example, consumers who shop online exercise free will but are still subjected to deep consumer-profiling and weaker bargaining power. In the 2022 *Meta Platforms Inc.* case, the same burning issue of deep profiling was eloquently exposed as an unfair method of competition, in contrast to the methods that prevail under conditions of meritocratic competition.⁶⁰

The underlying rationale for protecting privacy and personal data is to strengthen the function of prevention at an earlier stage of competitive unfairness. The idea is that deep consumer-profiling should not become the industry standard.⁶¹ Furthermore, the systematic misuse of consumer data leads to superior market power alongside reduced privacy and quality.⁶² As consumer data are valuable for product improvements and personalization, they can be exploited further for sale or targeted advertisements.⁶³ Data can be unethically misused to estimate demand for artificial intelligence (“AI”).⁶⁴ We are witnessing a revolutionary transformation of the digital economy,

⁵⁸ See JOHN E. ROEMER, *THEORIES OF DISTRIBUTIVE JUSTICE* 279 (1998) (on the theory of distributive justice for equality of opportunity).

⁵⁹ *Id.* at 276.

⁶⁰ *Meta Platforms Inc.*, *supra* note 46, at ¶ 23.

⁶¹ *Proposal for DMA*, *supra* note 6, at para. 61; *DMA*, *supra* note 1, at para. 72 (discussing how transparency requirements for consumer profiling can put “external pressure on gatekeepers not to make deep consumer profiling the industry standard” and “superior” privacy protection); see also Angela Phillips & Eleonora M. Mazzoli, *Minimizing Data-Driven Targeting and Providing a Public Search Alternative*, in MARTIN MOORE ET. AL., *REGULATING BIG TECH: POLICY RESPONSES TO DIGITAL DOMINANCE* 116 (2022) (providing commentary on profiling, targeting and microtargeting as the real problems of data collection).

⁶² See INVESTIGATION, *supra* note 15, at 51; U.K. TREASURY, *UNLOCKING DIGITAL COMPETITION: REPORT OF THE DIGITAL COMPETITION EXPERT PANEL* 43 (Mar. 2019).

⁶³ Phillips & Mazzoli, *supra* note 61, at 114 (distinguishing between active and passive personalization and identifying the former as key driver for data diversity); INVESTIGATION, *supra* note 15, at 42 (Facebook and Google collect data and have built out massive collections of personal information about their users. This information is then sold to advertisers, allowing Facebook and Google to “profit [] immensely.”) from behavioral advertising; see also, Anca D. Chirita, *The Rise of Big Data and the Loss of Privacy*, in MOR BAKHOUM ET. AL., *PERSONAL DATA IN COMPETITION, CONSUMER PROTECTION, AND INTELLECTUAL PROPERTY LAW: TOWARDS A HOLISTIC APPROACH?* 165 (2018); ZUBOFF, *supra* note 51, at 26 (on business models leveraging data for product improvement, advertising and for sale).

⁶⁴ OECD HANDBOOK, *supra* note 7, at 24–5 (discussing how consumer data are essential for higher returns from behavioral advertising).

the foundations of which are constructed on business freedom, making it possible to conduct retrospective analyses of consumer behavior through the historical tracking of consumer behavior, preferences and needs.⁶⁵ The new approach to the digital economy has moved beyond retrospective analyses toward implementing unorthodox methods of predictive analysis of consumer behavior.⁶⁶ Such methods have been used systematically to capture the hidden vulnerabilities and unconscious behavior of consumers, revealing their buyer power.⁶⁷ Therefore, policymakers are no longer able to ignore earlier warnings about the use of automated machine learning and algorithmic techniques.⁶⁸ Algorithms have developed AI models of consumer behavior which are, unfortunately, subordinate to hugely powerful corporate interests. To this end, it is desirable to also balance the needs of smaller businesses, which might not otherwise have any means of accessing consumer data for the AI purposes described above.

All in all, the DMA clearly defines a “public interest” in health and security.⁶⁹ Such interests may serve as legitimate grounds for defense. The DMA also clarifies that, when Member States enforce national unfair-competition rules, they cannot pursue the same objectives as Union unfair-competition law.⁷⁰ As an exception, the Court of Justice of the European Union (“CJEU”) may recognize other legitimate public interests.⁷¹ Other notable goals include fostering innovation; maintaining high-quality, fair, and competitive prices; and protecting consumer choice through an evolutionary consideration of data-driven advantages for data analytics.⁷² In fact, the multitude of goals at

⁶⁵ See *id.*; STUCKE, *supra* note 29, at 134 (discussing “data-opolies” harvesting consumer data for an “unavoidable” business partner status and extracting revenues from predictions about consumer behavior).

⁶⁶ ZUBOFF, *supra* note 51, at 261.

⁶⁷ *Id.* at 261, 338.

⁶⁸ See Karen Yeung & Martin Lodge, *Algorithmic Regulation: An Introduction*, in ALGORITHMIC REGULATION 10 (Karen Yeung & Martin Lodge eds., 2019) (discussing how novel business models stimulate consumer spending). See generally Natalia Criado & Jose M. Such, *Digital Discrimination* in YEUNG above, at 84 (on how machine learning segregates categories of consumers through data mining, while algorithms predict consumer-wealth status on the basis of consumer-purchase data).

⁶⁹ *Proposal for DMA*, *supra* note 6, at art. 9 (proposing the potential for Member States to adopt obligation exemptions for gatekeepers on the grounds of public morality, public health, or public security); DMA, *supra* note 1, at art. 45 (allowing exemptions in some instances based on public health or public security).

⁷⁰ See DMA, *supra* note 1, at para. 11.

⁷¹ See DMA, *supra* note 1, at para. 9 (establishing that case law of the CJEU can present “overriding reasons of public interest” and defining the reviewing authority of the CJEU).

⁷² *Proposal for DMA*, *supra* note 6, at para. 25; DMA, *supra* note 1, at paras. 25, 107. The DMA also discusses the Commission’s consideration of analytics prospects and data advantages. See DMA, *supra* note 1, at art 3 (8). MARCO IANSITI & KARIM R. LAKHANI, *COMPETING IN THE AGE OF AI: STRATEGY AND LEADERSHIP WHEN ALGORITHMS AND*

the heart of the DMA reveals a certain degree of legal sophistication. Surely, this myriad of regulatory goals demands a significant focus on the future enforcement of the DMA. One would not want this regulation to pursue too many goals and accomplish none.

Ultimately, one welcomed feature of the DMA is the prospect of institutional cooperation via a newly established high-level group that includes the Body of the European Regulators for Electronic Communications, European Data Protection Supervisor and Data Protection Board, European Competition Network, Consumer Cooperation Network, and European Regulatory Group of Audio-visual Media Regulators.⁷³ The duty to cooperate in good faith is enshrined in Article 4 (3) of the Treaty on European Union (“TEU”).⁷⁴ This cooperation illustrates important competitive intersections with data protection and media law.

THE INTERSECTION OF THE DMA WITH THE DIGITAL SERVICES ACT AND ITS GOALS

The DSA and its driving goals aim to ensure legal clarity for both businesses and consumers dealing with high-impact technologies and infrastructures, including AI, high-performance computing, quantum computing, cloud, platforms, 5G, and fiber infrastructure.⁷⁵ The Act also seeks to strengthen competition in the digital single market. Its most ambitious mission is to strive for a secure “data society and economy” that provide competitive, fair, accessible, technologically neutral, innovative, consumer-friendly, human-centric, and trustworthy public services.⁷⁶

There are several intersections between the DMA and the DSA, especially as regards the human-centric approach to fundamental human rights, including dignity, privacy, data protection, and security, but also the rise of AI.⁷⁷ Other intersections concern consumer and data protection, technological and net neutrality, the principle of non-discrimination, equality, and inclusiveness. The DSA takes a particularly human-centric approach to AI⁷⁸ in seeking to eliminate practices that undermine consumer rights, data protection, and labor rights, given the advent of teleworking. While the DMA also empowers consumers with economic rights, such as free choice and privacy, the DSA opts for a higher level of consumer protection, aiming to improve the rights

NETWORKS RUN THE WORLD 198 (2020) (on digital monopolists acting as information “fiduciaries”).

⁷³ DMA, *supra* note 1, at para. 93 and art. 41.

⁷⁴ Meta Platforms Inc., *supra* note 46, at ¶ 28, 29 (on the duty to cooperate in good faith in the TEU and the lack of clear rules on cooperation mechanisms).

⁷⁵ Digital Future of Europe: Digital Single Market and Use of AI for European Consumers, PARL. EUR. DOC. P9 TA (2021) 0261, para. 18 (May 20, 2021).

⁷⁶ *Id.* at paras. 18, 88 (on the lack of clarity due to unclear and fragmented regulation).

⁷⁷ *Id.* at para. 87.

⁷⁸ *Id.* at para. 41.

of users, as well as trust and online safety.⁷⁹

The DSA is applicable to AI because it seeks to reduce the risk of bias and human control over algorithmic decision-making. Like the DMA, the DSA raises the prospect of a ban on harmful or discriminatory practices, caused by bias and various forms of algorithmic discrimination.⁸⁰ All in all, the DSA promises to rise above the materialistic or utilitarian efficiency-based approach to AI, in favor of an ethical or deontological approach to consumer rights, by seeking individual justice, including fairness and inclusiveness.

The DMA and the DSA intersect on the issue of data-driven algorithmic discrimination. To counteract this issue, fairness becomes central to the ethical analysis of algorithmic discrimination. However, in targeting biased algorithmic decision-making, the DSA goes beyond the DMA to capture sophisticated technological surveillance, similar to the eighteenth century Panopticon⁸¹ theory of surveillance. During the early 1980s, eavesdropping, photographic surveillance of home interiors, and other forms of privacy invasion amounted to tortious surveillance.⁸² In the twenty-first century, the old Panopticon theory has been tweaked to accommodate ever-more-pressing privacy challenges. Therefore, the new theory of intrusive surveillance captures all forms of “indiscriminate” collection of personal data for subsequent abuse and misuse.⁸³ This theory can, it is hoped, overcome the shortcomings of earlier theories of privacy,⁸⁴ including seclusion, control, restricted, and limited access to data. Finally, simply by placing restrictions on such pervasive forms of surveillance,⁸⁵ democracy can be maintained, while the economic identity of consumers is preserved.

THE SUBSTANTIVE ARGUMENTS AGAINST THE ECONOMIC DEPENDENCE ON GATEKEEPERS

Historically, the economic dependence of a smaller competitor on a dominant undertaking can be traced back to the 1974 *Commercial Solvents* case.⁸⁶ The underlying reasoning in favor of unfair-competition digital regulation

⁷⁹ *Id.* at paras. 27, 43 (on empowering consumers).

⁸⁰ *Id.* at paras. 55, 74.

⁸¹ See Jeremy Bentham, *Panopticon, Constitution, Colonies, Codification*, in 4 THE WORKS OF JEREMY BENTHAM 173, 241 (1843) (on exercising control when prisoners were aware of being subject to surveillance).

⁸² See RICHARD A. POSNER, *THE ECONOMICS OF JUSTICE* 266 (1981).

⁸³ See RICHARD A. SPINELLO, *Informational Privacy*, in THE OXFORD HANDBOOK OF BUSINESS ETHICS 371 (George G. Brenkert ed. 2012).

⁸⁴ *Id.* at 374 (discussing theories of privacy).

⁸⁵ See ZUBOFF, *supra* note 51, at 94 (describing the autonomy perils of a surveillance-based economic order).

⁸⁶ See BERT KEIRSBILCK, *THE NEW EUROPEAN LAW OF UNFAIR COMMERCIAL PRACTICES AND COMPETITION LAW* 522 (2011).

reflects a “significant degree”⁸⁷ of economic dependence on gatekeepers among smaller businesses and consumers. Because of the data-driven advantages that gatekeepers of online platforms hold, such economic dependence of smaller businesses and consumers becomes exploitative. For far too long, there has been an enforcement gap in Union unfair-competition law.⁸⁸ This gap has been blamed on the perceived limitations of Articles 101 and 102⁸⁹ caused primarily by lengthy investigations, following the abuse of a dominant position, i.e., *ex-post*. For legal certainty, however, an *ex-ante* regulatory approach to unfair practices can best prescribe the economic dependence above. Thus, unfair competition is stricter than Article 102, as gatekeepers engaged in unfair practices do not necessarily have to be dominant undertakings.

Traditionally, Article 114 of the TFEU has been instrumental in harmonizing domestic rules and legal certainty.⁹⁰ The approximation of unfair-competition rules⁹¹ aims to eliminate barriers to free trade for the benefit of consumers and the digital economy. Notably, Regulation 1/2003 allows for stricter rules on unilateral and contractual acts involving unfair trading practices.⁹²

As a potential justification, the avoidance of divergent regulatory approaches to unfair competition leaves much to be desired, since the fragmentation argument⁹³ has drafted special, as well general, rules against unfair competition.⁹⁴ For digital markets, the DMA is just the tip of the iceberg. However, national regulations of digital markets continue to lag far behind Union efforts. A twist in the future of Europe’s enforcement of rules against unfair competition signals a departure from competition law. This could deplete the substance of traditional antitrust law by shifting attention towards unfair competition. However, it also signals that antitrust law has become too difficult to manage and that cases below the level of dominance also represent an important slice of monopoly law or, more accurately, monopolistic competition. These emerging cases must also be considered.

⁸⁷ DMA, *supra* note 1, at para. 2.

⁸⁸ See e.g., ANCA DANIELA CHIRIȚĂ, THE GERMAN AND ROMANIAN ABUSE OF MARKET DOMINANCE IN THE LIGHT OF ARTICLE 102 TFEU 373 (2011).

⁸⁹ See Consolidated Versions of the Treaty on European Union and the Treaty on the Functioning of the European Union 2008 O.J. 88-89 (C 115); DMA, *supra* note 1, at para. 11.

⁹⁰ TFEU art. 114.

⁹¹ See e.g., DMA, *supra* note 1, at para. 8.

⁹² See Council Regulation (EC) No 1/2003 of 16 December 2002 on the Implementation of the Rules of Competition Laid Down in Articles 81 and 82 of the Treaty, 2003 O.J. (L 1) 2.

⁹³ DMA, *supra* note 1, at para. 7 and art. 1 (5).

⁹⁴ As the DMA applies to digital markets, it deals with special unfair competition in the digital sector only.

Furthermore, Union unfair-competition law requires a lower level of intervention than Article 102. However, the open-textured nature of Article 102 has long relied on scant provisions; it cannot apply to emerging gatekeepers without adding to the letter of the law. Earlier references in the DMA to evidence of high levels of concentration in “one or very few” platforms⁹⁵ indicate a possible regulatory overlap with Article 102. Essentially, the DMA signals an enforcement shortcut to “extensive” antitrust investigations,⁹⁶ indicating a possible regulatory overlap with Article 102.

The DMA has also adopted a legal presumption of “gatekeeper status” based on quantitative and qualitative criteria.⁹⁷ The onus remains on gatekeepers to rebut the presumption.⁹⁸ This is particularly relevant in cases where the quantitative thresholds are met, but the gatekeepers do not fulfil their status requirements. Gatekeepers’ statuses are subject to regular reviews every three years.⁹⁹

Again, the DMA departs from the status quo in relation to dominant position. It overcomes economic formalism, especially the rigidity¹⁰⁰ of clearly defined digital markets. Previously, prolonged investigations¹⁰¹ had practically ruled out any extension below the threshold of dominance. First, the supra-national dimension of Union competition law did not reach below the

⁹⁵ DMA, *supra* note 1, at paras. 3, 12, 21. (Paragraph 3 discusses a “small number of large providers” enjoying “considerable economic power.” However, paragraph 12 contradicts this lower bar to intervention against unfairness. Equally elusive remains the reference in paragraph 21 to “a very high number of business-users”).

⁹⁶ *Id.* at para. 5.

⁹⁷ *Id.* at 5-6. (Historically, gatekeepers consolidated their status through conglomerate acquisitions, *see id.* at 7-8); see OECD HANDBOOK, *supra* note 7, at 48 and 51 (on how “killer” acquisitions, which eliminate emerging innovators, have gone under the radar because the theory of harm for conglomerate mergers was not fit for purpose). *See Conseil de l’Union européenne, Secrétariat général du Conseil (8722/22)* on REG 2022/1925 ON CONTESTABLE AND FAIR MARKETS IN THE DIGITAL SECTOR, para. 71 (May 10, 2022); *Proposal for DMA*, *supra* note 6, at 21 (on mandatory notifications of such acquisitions).

⁹⁸ DMA, *supra* note 1, at para. 23 (Paragraph 23 discusses rebutting the presumption above if the quantitative thresholds were met but an undertaking demonstrated that it does not fulfil the requirements for gatekeeper status. Article 3 (8) lists criteria for the Commission to consider when assessing any undertaking, including their size, turnover, market capitalization, cross-border impact, number of users, the importance of the service and the number of years relevant to the given thresholds, or even data-driven advantages, behavioral biases, and so on. Article 3 (5) states that undertakings can present arguments for why they should not be classified as gatekeepers).

⁹⁹ DMA, *supra* note 1, at para. 30.

¹⁰⁰ *Cf.* JONATHAN TEPPER & DENISE HEARN, *THE MYTH OF CAPITALISM: MONOPOLISTS AND THE DEATH OF COMPETITION* 243 (2019) (critical of economists for employing modelling to justify monopolies and against handing over antitrust to economists. Therefore, the DMA dispenses with the economic analysis of gatekeepers’ market power).

¹⁰¹ *Proposal for DMA*, *supra* note 6, at para. 5.

threshold of market dominance, as national competition law would have stepped in to help. Second, antitrust interventions staged too early are costly, while taxpayers demand evidence of ground-breaking interventions. For example, it is estimated that such a regulatory approach would cost €81 million during the first seven years of enforcement of the law against unfair competition.¹⁰² Third, lesser-known gatekeepers may not have any visible impact on Union consumers. Finally, unfair competition prioritizes smaller claims against rivals, which the competition authorities lack the time and the resources to pursue in the first instance. Thus, the DMA can prioritize unfair practices against smaller rivals of gatekeepers in cloud computing, advertising, and data analytics.

The recognition of an important gatekeeper with a significant market impact enjoying an actual or foreseeable durable position over three or more years¹⁰³ adds to the inherent tensions between the earlier approach to dominance and the regulatory approach to gatekeepers.¹⁰⁴ While the latest approach advances a rigorous categorization of digital predominance or superiority, it also captures a vast accumulation of data that negatively harms consumers, including in borderline cases – for example, when gatekeepers draw upon data-driven advantages for analytics purposes, but without qualifying as outright monopolies.

A less inspired terminological shift from digital monopolies to gatekeepers, or from consumers to users, may trigger further criticism if a dull regulatory approach is eventually adopted. However, the focus on economics is not completely lost, as the DMA has replaced high turnovers with other flexible benchmarks, including “very high” market capitalization¹⁰⁵ and the ratio of equity or profit. Ultimately, the DMA has opted for “very significant”¹⁰⁶ turnover, market capitalization, or an equivalent fair-market value for gatekeepers who are not publicly listed as suitable benchmark factors. Therefore, high group turnover¹⁰⁷ remains an indicator of a relatively strong ability to monetize. By contrast, if the turnover is low, then it is more helpful for market capitalization to look towards potential gatekeeper status. Gatekeepers are presumed to have a significant impact, which can be ascertained by looking at their turnover threshold in the last financial year or by finding evidence of sustained market capitalization at or above that threshold over three or

¹⁰² *Id.* at para. 11.

¹⁰³ DMA, *supra* note 1, at para. 18.

¹⁰⁴ *Proposal for DMA*, *supra* note 6, at para. 15.

¹⁰⁵ The Commission will adopt delegated acts to develop the methodology to calculate the market value included in an Annex. *See* DMA, *supra* note 1, at paras. 17, 20 and art. 3 at (2), (3), (6), (7). According to Article 3 (2), gatekeepers are obliged to notify the Commission about meeting the above thresholds within two months.

¹⁰⁶ *See* DMA, *supra* note 1, at 17.

¹⁰⁷ DMA, *supra* note 1, at para. 17 (discussing how turnover and capitalization are indicative of the ability to leverage access to financial markets).

more years.¹⁰⁸

Previously, the initial turnover benchmark was over €6.5 billion during the last three financial years, or an average market capitalization (or its equivalent fair-market value) of at least €65 billion during the last financial year.¹⁰⁹ Later, these figures were increased to €7.5 and €75 billion respectively.¹¹⁰ Further benchmarks include “at least” 45 million monthly active end users and 10,000 yearly active business users, respectively.¹¹¹ Although the latest thresholds are moderately low, they are forward-looking and aim to include as many promising cases as possible. By contrast, the US Bill included proposed thresholds of at least 50 million “U.S.-based monthly active” end users and 100,000 business users, respectively.¹¹² Initially, U.S. market capitalization was originally set at over \$60 billion in the last two financial years; it was subsequently lowered to over \$30 billion.¹¹³

All of the above projections remain modest, compared to the big tech (collectively referred to as GAFAM for Google, Amazon, Facebook, Apple, and Microsoft) monopolists’ latest variable market capitalization: Alphabet (previously Google), \$1.33 trillion; Amazon, \$1.07 trillion; Meta (previously Facebook), \$604 billion; Apple, \$2.64 trillion; and Microsoft, \$2.23 trillion.¹¹⁴ In contrast, with a market capitalization of \$143 billion, Netflix will struggle to join these GAFAM trillionaires.¹¹⁵

Although the figures for very high number of active users are future indicators of economic dependence on gatekeepers, flexibility is expected to account for imminent market and technological developments.¹¹⁶ In particular, the DMA remains forward-looking; it includes other considerations, such as foreseeable market developments and even future data-driven mergers.

¹⁰⁸ *Id.* at paras. 18, 19 (discussing additional consideration of volatile markets).

¹⁰⁹ *Proposal for DMA*, *supra* note 6, at art. 3.

¹¹⁰ *DMA*, *supra* note 1, at art. 3 (2).

¹¹¹ *Id.* at 6, para. 20 and art. 3 (2) (clarifying that an “important gateway” can be established by looking at a very high number of business users dependent on a core platform or a very high number of monthly active consumers. That number should represent a substantive percentage of the Union population).

¹¹² H.R. 3825, *supra* note 26.

¹¹³ *Id.*

¹¹⁴ The variable market capitalizations above all come from companiesmarketcap.com and are current as of May 2023. *Largest Companies by Market Cap*, COMPANIES MARKET CAP, <https://companiesmarketcap.com/> (last visited May 4, 2023). “Google is the largest subsidiary of Alphabet, Inc. a holding company based in Mountain View California. Recently Alphabet’s market cap surpassed \$1 trillion, making it just the fourth US company to achieve that milestone (along with Apple, Amazon, and Microsoft).” See RAJ VENKATESAN & JIM LECINSKI, *THE AI MARKETING CANVAS: A FIVE-STAGE ROAD MAP TO IMPLEMENTING ARTIFICIAL INTELLIGENCE IN MARKETING* 177 (2021).

¹¹⁵ *Largest Companies by Market Cap*, Companies Market Cap, <https://companiesmarketcap.com/> (last visited May 4, 2023).

¹¹⁶ *DMA*, *supra* note 1, at art. 3 (8).

Ultimately, the EC has the power to regularly adjust the quantitative thresholds above, and even to exempt gatekeepers as necessary.¹¹⁷

Following a mandatory notification procedure,¹¹⁸ the EC may ascertain gatekeeper status even where an undertaking does not meet the above quantitative thresholds.¹¹⁹ However, after both Alphabet and Meta rebranded to escape liability, gatekeepers now must not “artificially segment[]” their platforms through contractual, commercial, technical, or any other means in order to eschew the above threshold.¹²⁰

The terminology used to describe a certain competitive advantage over rivals is more inspired and is expressed “in terms of scale and intermediation power,” adopting the recent rhetoric against digital giants enjoying an “unassailable” position.¹²¹ This blurs the distinction between normal competition and regulatory intervention against unfair competition. Under the DMA, however, intervention is warranted for any intermediate position between a data-driven oligopoly and a monopoly,¹²² which means that market shares even well below 40% can also be targeted. Although the DMA encourages timely enforcement action, it must be “necessary and appropriate” to maintain contestability and prevent unfairness.¹²³

Previously, enlarged digital monopolies were restyled as compressed “mologopolies” with diminished responsibility.¹²⁴ This regressive morphosis swims against the tide. The mainstream regulatory and enforcement consensus over GAFAM treated them as “unassailable” monopolies.¹²⁵ By contrast, the mologopoly view argues that MAGNAP (Microsoft, Apple, Google, Netflix, Amazon, and Facebook) are oligopolists struggling with disruptive innovation.¹²⁶

¹¹⁷ *Id.* at para. 95.

¹¹⁸ *Draft Proposal (8722/22)* for a Regulation (EU) (2022/1925) of the European Parliament and of the Council of Oct. 19, 2022 on Contestable and Fair Markets in the Digital Sector and Amending Directives (Digital Markets Act), at art. 3 (2) (May 11, 2022) [hereinafter *Draft Proposal for DMA*].

¹¹⁹ *Id.* at paras. 73, 74; DMA, *supra* note 1, at para. 73.

¹²⁰ *Id.* DMA, at para. 70 and art. 13.

¹²¹ *Proposal for DMA*, *supra* note 6, at para. 26 (on the foreseeability of an “unassailable” position that makes a market prone to tipping). DMA, *supra* note 1, at 7; H.R.; INVESTIGATION, *supra* note 15, at 335 (on Apple’s unassailable position with its App Store on iOS).

¹²² See DMA, *supra* note 1, art. 3.

¹²³ See DMA, *supra* note 1, at para. 27. See also STUCKE, *supra* note 29, at 156 (on how data “hoarding” made markets less contestable).

¹²⁴ See e.g., NICOLAS PETIT, *BIG TECH & THE DIGITAL ECONOMY* 29, 60 (2020) (discussing the mologopoly hypothesis for big tech firms).

¹²⁵ *Proposal for DMA*, *supra* note 6, at para. 26 (on the foreseeability of an “unassailable” position that makes a market prone to tipping); DMA, *supra* note 1, at para. 26; H.R.; INVESTIGATION, *supra* note 15, at 335 (on Apple’s unassailable position with its App Store on iOS).

¹²⁶ As previously mentioned, Netflix lacks the scale to join the likes of GAFAM. See

If they were all TV producers, this “mologopoly” scenario would make sense, as it incorporates innovation-based leniency for digital giants, morphing structural monopoly into a “cognitive” oligopoly.¹²⁷ This has been done without a neat differentiation between the technical digital infrastructure and the digital data, as a common exchange currency. On the positive side, mologopoly theory has introduced an intermediate status between oligopoly and monopoly.¹²⁸ This hybrid status is similar to that of a gatekeeper, facing continuous competitive pressure to innovate in order to stay afloat. Due to the manifold emergence of abusive¹²⁹ and, in particular, unfair practices, such innovative competitive pressures are counterintuitive. Furthermore, as one commentator¹³⁰ has noted, since 2000, there has been a sharp decline in disruptive innovation. This has happened concomitantly with the digital giants’ massive investments in proprietary software systems. Ultimately, competition alone can be a major disruptive force for innovation.¹³¹ Innovation should not, however, become a far-too-convenient justification for prolonged digital dominance.

By contrast, the alternative theory of “data-opolies” builds upon a narrower digital oligopoly, which relies on the accumulation of data to protect itself from disruptive innovation and cements dominance through leveraging.¹³² The merit here lies in the identification of data, as an element of commonality. The shortcoming is a lack of clarity regarding a consumer-data risk scale, including, for example, extraction for invasive sharing, targeted or generic analytics, and data selling. The legal connotations may cause antitrust to delegate marketing issues to consumer protection or financial crime, or perhaps even to human-rights law. The latest addition is taxation, which could see GAFAM’s profits taxed¹³³ for the unethical sale of consumer data. After all, antitrust law is not a panacea for every type of wrongdoing committed by digital monopolists. At least so far, the consensus has been that more should be done to tackle exclusionary abuses of data targeting rivals,

Petit, *supra* note 124, at 102.

¹²⁷ *Id.* at 62.

¹²⁸ *Id.* at 153.

¹²⁹ BESSEN, *supra* note 29, at xi (suggesting that with great economic power came opportunities for abuse and “political corruption.”).

¹³⁰ *Id.* at 35.

¹³¹ *Id.* at 5195. Competition in the market can lead to more innovation by encouraging companies to spend on research and development. See also PAUL KRUGMAN, THE AGE OF DIMINISHED EXPECTATIONS: U.S. ECONOMIC POLICY IN THE 1990s 11 (1997). “Productivity is not everything but in the long run it is almost everything.”

¹³² STUCKE, *supra* note 29, at 41–42, and 55 (on data-opolies preventing smaller firms from achieving their potential).

¹³³ See e.g., Saadia Madsbjerg, *It’s Time to Tax Companies for Using Our Personal Data*, NY TIMES, Nov. 14, 2017, <https://www.nytimes.com/2017/11/14/business/dealbook/taxing-companies-for-using-our-personal-data.html>. See also Klobuchar, *supra* note 30, at 347.

rather than practices that exploit consumers.¹³⁴ The DMA promises to do much more to stamp out such unfair practices.

The theory of surveillance capitalism, alluded to earlier, has implications for both “data-opolies” and the “mologopoly” scenario. Data-driven combinations of consumer preferences can reveal consumer wealth or poverty status,¹³⁵ which can harm the economic buying power of consumers. Predictive analytics of consumer behavior, based on intensive surveillance, could remove consumer free choice.

Furthermore, as consumers are disempowered, their needs may unconsciously become merely subordinate to “mono”- or “oligo”-polists. An economic theory of consumer surveillance reveals the mystery of a well-known phenomenon: the way in which digital corporations unconsciously, but successfully, impose choice on consumers before they have exercised free will.¹³⁶ In other words, robotics can manipulate consumer choice by leveraging the freedom to choose, which also includes a genuine freedom to not buy anything. Otherwise, consumers can be manipulated into unwanted purchases.¹³⁷

The DMA defines “substantial” economic power in cases where gatekeepers behave unfairly.¹³⁸ The unfairness may involve design choices, including biased presentation; an interface that lessens consumer autonomy, decision-making or choices, or undermines interoperability;¹³⁹ technical protection; discriminatory terms; unlawful copyright; and even misleading information.

All in all, an evolutionary trajectory of dependence emerges from the theory of economic dependence on gigantic monopoly power, influencing a gatekeeper’s lessening power. While recognizing fundamental economic consumer rights, such as privacy and free choice, the above trajectory of economic dependence transitions towards an ideal of human-rights independence for consumers and entrepreneurs alike. This ideal, ultimately, matches a perfectly competitive market scenario. By contrast, human dependence on robotics has become the final, as yet unaccomplished, mission of surveillance capitalism.¹⁴⁰

¹³⁴ STUCKE, *supra* note 29, at 70 (on neglecting the exploitative abuse).

¹³⁵ See e.g., Christoph Busch, *Implementing Personalized Law: Personalized Disclosures in Consumer Law and Data Privacy Law*, 86 U. CHI. L. REV. 319 (2019) (on how the actual correlation between “income and extraversion” accurately predicts consumer-spending status).

¹³⁶ See ARIEL EZRACHI & MAURICE E. STUCKE, *HOW BIG-TECH BARONS SMASH INNOVATION—AND HOW TO STRIKE BACK* 121 (2022).

¹³⁷ *Id.*

¹³⁸ DMA, *supra* note 1, at para. 70.

¹³⁹ STUCKE, *supra* note 29, at 66 (on how data-opolies should facilitate interoperability).

¹⁴⁰ ZUBOFF, *supra* note 51, at 11, 14.

FROM CONTRACTUAL UNFAIRNESS TO UNFAIR COMPETITION

The origins of unfair competition can be traced back to the French Civil and Consumer Codes and to the German ideal of equal opportunity for competitors.¹⁴¹ The French Civil Code (1804) allows rivals to claim compensation for harm caused by unfair conduct.¹⁴² Like the German ideal, the U.S. Sherman Act (1890) sought to ensure that smaller rival entrepreneurs would have the opportunity to compete,¹⁴³ protecting their independence in the name of “industrial liberty”.¹⁴⁴ Before its enactment, giant trusts were condemned for denying their rivals this economic opportunity.¹⁴⁵ However, a prominent commentator had dismissed the U.S. ideal of equal opportunity for entrepreneurs and argued persuasively in favor of consumer welfare,¹⁴⁶ a concept extracted from a historical context in which there were scant references to preventing “free competition” to “advance the cost to the consumer”.¹⁴⁷ Rightfully, others favor equal opportunity, but not equal “outcomes”.¹⁴⁸

In contrast, German unfair-competition law protects competitors, consumers, and all other market contestants against acts of unfair competition.¹⁴⁹ Therefore, the fundamental value of fairness has been instrumental in securing competitive business fairness for rivals, economic opportunities for smaller entrepreneurs, and (last but not least) fairness for consumers. Consumer fairness can attain the elevated higher status of consumer “sovereignty” where consumers, too, enjoy equal rights and equality of

¹⁴¹ See e.g., DAVID D. GERBER, *LAW AND COMPETITION IN TWENTIETH CENTURY EUROPE: PROTECTING PROMETHEUS* 184 (1998) (on the German concept of economic dependence); see also KEIRSBILCK, *supra* note 86, at 152, 491 (explaining the French development of unfair competition law).

¹⁴² See Article 1240 of the French Civil Code (Article 1240 - Code civil - Légifrance (legifrance.gouv.fr)).

¹⁴³ Lande, *supra* note 27, at 82.

¹⁴⁴ See RUDOLPH J.R. PERITZ, *COMPETITION POLICY IN AMERICA: HISTORY, RHETORIC, LAW* 15 (1996).

¹⁴⁵ See David K. Millon, *The Sherman Act and the Balance of Power*, in Sullivan, *supra* note 27, at 106 (on location-based price discrimination representing a “monstrous” crime against public trade); reprinted in 61 S. CAL. L.R. 1219, 1226-28 (1988).

¹⁴⁶ BORK, *supra* note 27, at 89-90 (using consumer welfare interchangeably with the “wealth of the nation”) but at 62 (noting that the Judiciary Committee favored equal opportunity).

¹⁴⁷ See e.g., WILLIAM LETWIN, *LAW AND ECONOMIC POLICY IN AMERICA: THE EVOLUTION OF THE SHERMAN ANTITRUST ACT* 89 (1965) (on a potential extension of the Sherman Act beyond trusts and combinations to embrace moral purposes).

¹⁴⁸ TEPPER & HEARN, *supra* note 100, at 242.

¹⁴⁹ KEIRSBILCK, *supra* note 86, at 146.

opportunity.¹⁵⁰ Under Union competition law, equality of opportunity¹⁵¹ has been transposed to protect rivals. For this reason, U.S. commentators remain skeptical of wavering notions of fairness.¹⁵² They fear a sad antitrust epilogue, in which the promotion of inefficient rivals causes harm to consumers and lessens competition.

Nevertheless, economic and social concerns about equality have led to a challenging choice between two aspects of fairness. The first aspect focuses on economic welfare to advance prosperity, while the second focuses on individual wellbeing or happiness to advance social justice through a fair distribution of resources. Commentators have argued that the balance should be tipped in favor of economic welfare; otherwise, consumers will be worse off.¹⁵³ Equality of opportunity, therefore, depends on the chosen path of economic or social fairness. For example, to ensure fairness in compensatory damages, individual consumers with identical responsibilities should be treated equally.¹⁵⁴ For fairness in relation to rewards, individuals with identical responsibilities should have equal access to available resources.¹⁵⁵

During the early 1870s, the English law of contract traced the lack of consumer choice first to public-utility services that provided essential services and then to powerful monopolists.¹⁵⁶ This restriction on consumer choice happened concomitantly with the widespread use of standard terms of contract on a take-it-or-leave-it basis.¹⁵⁷ In the late 1970s, concern for fairness led to changes in general contract law, including the attribution of more authority to judges to strike down contract terms and the labeling of certain standard terms as unfair.¹⁵⁸ This prescriptive approach contributed to an unfortunate regulatory divide between substantive and procedural contractual

¹⁵⁰ See ADRIAN KUENZLER, *RESTORING CONSUMER SOVEREIGNTY: HOW MARKETS MANIPULATE US AND WHAT THE LAW CAN DO ABOUT IT* 270 (2017).

¹⁵¹ See RENATO NAZZINI, *THE FOUNDATIONS OF EUROPEAN UNION COMPETITION LAW: THE OBJECTIVE AND PRINCIPLES OF ARTICLE 102* 23 (2011) (on protecting a less efficient competitor).

¹⁵² See e.g., Daniel D. Sokol, *Antitrust, Industrial Policy, and Economic Populism*, in DAMIEN GERARD ET AL., *RECONCILING EFFICIENCY AND EQUITY: A GLOBAL CHALLENGE FOR COMPETITION POLICY* 284 (Damien Gerard & Ioannis Lianos eds., 2019) (on how a focus on political factors may hurt consumers); also see, Thomas H. Austern, *Problems and Prospects in Antitrust Policy-I*, in ALMARIN PHILLIPS, *PERSPECTIVES ON ANTITRUST POLICY* 15 (Almarin Phillips ed., 1965) (on how fairness may restrict free trade).

¹⁵³ See LOUIS KAPLOW & STEVEN SHAVELL, *FAIRNESS VERSUS WELFARE* 38, 52 (2002).

¹⁵⁴ See MARC FLEURBAEY, *FAIRNESS, RESPONSIBILITY, AND WELFARE* 40 (2008).

¹⁵⁵ *Id.*

¹⁵⁶ See STEPHEN A. SMITH, *ATYIAH'S INTRODUCTION TO THE LAW OF CONTRACT* 112 (2005).

¹⁵⁷ *Id.* at 12.

¹⁵⁸ See *id.* at 297; see generally, *Unfair Contract Terms Act 1977*, c. 50 (UK).

unfairness.¹⁵⁹ While the earlier common-law precedents¹⁶⁰ concerned the substantive unfairness of market-price considerations, consumer regulations focused on the procedural unfairness due to small, printed terms, unconscionable behavior,¹⁶¹ and ultimately, inequality in bargaining power, which transitioned from inequality into an abuse of superior market power through unfair pricing and other trading conditions. Again, this regulatory divide¹⁶² in conceptions of unfairness between contract terms, on the one hand, and prices and conditions, on the other, contributed to a widening gap between unfair competition and antitrust law. With its unique economic focus on price theory, antitrust moved toward independence from the legal formalism of contract law. Contractual unfairness has remained focused on the significant imbalance¹⁶³ between the rights and obligations of the parties, to the detriment of consumers. Similarly, under the UK Consumer Rights Act (2015), an identical benchmark of significant imbalance, as mentioned above, has been used to evaluate forms of contractual unfairness that disadvantage consumers.¹⁶⁴ By contrast, the U.S. legal standard of fairness captures actual or potential substantive injury to consumers.¹⁶⁵ Such unfairness cannot, reasonably, be prevented or outweighed by any countervailing benefits to consumers or competition.¹⁶⁶

Looking on the bright side, the DMA narrows this regulatory divide, bringing antitrust closer to unfair competition for the benefit of both businesses and consumers. An earlier draft considered imbalances of bargaining

¹⁵⁹ See SMITH, *supra* note 156, at 319 (discussing the distinction “between fairness in the process of forming a contract on the one hand, and fairness in the outcome of the contract on the other” seen in the classical theory of contract law); The Uniform Contract Terms Act requires assessment of both procedural and substantive fairness. See also Mindy Chen-Wishart, *Regulating Unfair Terms*, in ENGLISH AND EUROPEAN PERSPECTIVES ON CONTRACT AND COMMERCIAL LAW: ESSAYS IN HONOR OF HUGH BEALE 105, 112 (Louise Gullifer & Stefan Vogenauer eds. 2017).

¹⁶⁰ The English approach to precedent is more rigid than some other countries, for example, France. England rejected Roman law and any codification of the law in the sense of an entire written statement of the law. See RUPERT CROSS & J.W. HARRIS, PRECEDENT IN ENGLISH LAW 12 (Tony Honroé & Joseph Raz eds., 4th ed. 2004).

¹⁶¹ See *Lloyds Bank LTD v. Bundy* [1975] QB 326 (on undue influence); *Hart v. O'Connor* [1985] PC 1000, 1017–18 (where terms were more favorable to one party).

¹⁶² SMITH, *supra* note 156, at 319.

¹⁶³ *Id.* SMITH at 321; JOHN CARTWRIGHT, CONTRACT LAW: AN INTRODUCTION TO THE ENGLISH LAW OF CONTRACT FOR THE CIVIL LAWYER 206 (2007).

¹⁶⁴ See e.g., PAOLO SICILIANI, CHRISTINE RIEFA & HARRIET GAMPER, CONSUMER THEORIES OF HARM: AN ECONOMIC APPROACH TO CONSUMER LAW ENFORCEMENT AND POLICY MAKING 47 (2019).

¹⁶⁵ See James C. Cooper & Joshua Wright, *The Missing Role of Economics in FTC Privacy Policy*, in THE CAMBRIDGE HANDBOOK OF CONSUMER PRIVACY 470 (Evan Selinger, Jules Polonetsky, & Omer Tene, eds., 2018).

¹⁶⁶ *Id.* at 471.

power that create unfairness to the “detriment” of “prices, quality, fair competition, choice, and innovation”.¹⁶⁷ Subsequently, this type of unfairness was identified in cases where gatekeepers with “substantial” economic power undermined the autonomous and unbiased choice of individual users.¹⁶⁸

Ultimately, the DMA has transplanted a narrower abstraction of contractual unfairness due to a “serious imbalance” of bargaining power¹⁶⁹ against gatekeepers’ rivals. Such imbalances cause unfair practices that harm both businesses and consumers. Furthermore, unfairness is formulated broadly, with reference to the detriment of price, quality, fair competition, choice, and innovation.¹⁷⁰

Similarly, a contractual imbalance in the rights and obligations incumbent on gatekeepers’ competitors could place them at a “disproportionate”¹⁷¹ competitive disadvantage. Due to superior bargaining power, gatekeepers could unilaterally impose terms and conditions to the detriment of businesses and consumers.¹⁷²

Historically, advocates of procedural fairness have placed too much trust in the theory of informed notice and consent, letting consumers down.¹⁷³ The same goes for the U.S. standard of procedural fairness,¹⁷⁴ as few consumers can be bothered to read “dense boilerplate provisions laid out in tiny font sizes” and even fewer, can be bothered to exercise any meaningful choice.¹⁷⁵ This signals a risk of “information overload”.¹⁷⁶ However, an earlier draft clarified that the DMA would seek to challenge a more substantive type of unfairness, especially in relation to price and conditions including access to data. An imbalance in the rights and obligations imposed on businesses can confer on gatekeepers an unfair and disproportionate competitive advantage.

An earlier reference also alluded to “fairness” in the commercial

¹⁶⁷ See *Draft Proposal for DMA*, *supra* note 118, at para. 4.

¹⁶⁸ *Id.* at para. 70.

¹⁶⁹ *Proposal for DMA*, *supra* note 6, at paras. 4, 57; *DMA*, *supra* note 1, at para. 4.

¹⁷⁰ *DMA*, *supra* note 1, at para. 4.

¹⁷¹ *Proposal for DMA*, *supra* note 6 at Art 10; *DMA*, *supra* note 1, at para. 33.

¹⁷² *Id.* *DMA* at para. 33.

¹⁷³ See Claire Park, *How “Notice and Consent” Fails to Protect our Privacy*, NEW AMERICA (Mar. 23, 2020), <https://www.newamerica.org/oti/blog/how-notice-and-consent-fails-to-protect-our-privacy/> [<https://perma.cc/9FJN-Y632>]; see also Cristina Caffarra, Gregory Crawford & Johnny Ryan, *The Antitrust Orthodoxy is Blind to Real Harms*, VOX EU CENTRE FOR ECONOMIC POLICY RESEARCH (Apr. 22, 2021), <https://cepr.org/voxeu/blogs-and-reviews/antitrust-orthodoxy-blind-real-data-harms> [<https://perma.cc/APC3-QYRZ>].

¹⁷⁴ See Busch, *supra* note 135, at 310.

¹⁷⁵ KLOBUCHAR, *supra* note 30, at 347.

¹⁷⁶ BUSCH, *supra* note 135, at 322. Users that actually read all of the terms and conditions to which they consent may become overwhelmed with the information and experience decision fatigue.

relationship between undertakings and consumers, noting that new businesses offered digitally can benefit consumers when undertakings are not engaged in unfair practices.¹⁷⁷ The OECD¹⁷⁸ has echoed the ideal of fairness by recognizing how “unequal” bargaining power can lead to unfair terms that, ultimately, cause excessive prices. This interpretation challenges market positions beyond a monopolistic or super-dominant market position. In fact, several commentators¹⁷⁹ have argued in favor of a life-changing approach to platform governance. The spirit of fairness needs to shape an entire digital ecosystem. In drafting the DSA, emphasis was put on the ideal of a “competitive, transparent and fair” environment, implemented through the codifying of online advertising rules.¹⁸⁰ Ultimately, this may enhance both competition and data-protection laws.

Finally, the DMA offers a sensible definition of unfairness, in cases where a particular practice chills innovation and limits choice by causing actual or potential harm to contestability on a lasting basis.¹⁸¹ Contestability can be affected by barriers that prevent rivals from gaining access to a key input or by imbalances in the rights and obligations that are binding upon businesses, allowing gatekeepers to gain a disproportionate advantage. Nonetheless, gatekeepers should not undermine effective compliance through behavioral techniques or design interfaces.¹⁸²

A HOLISTIC REVIEW OF MATERIAL UNFAIRNESS IN THE GATEKEEPER AGE

Under Chapter III of the DMA, several obligations are imposed on privileged gatekeepers,¹⁸³ whose conduct is particularly unfair or harmful. First, rules governing services provided by gatekeepers must be identified “in a clear and unambiguous manner.”¹⁸⁴

Due to the rapid pace of technological progress, it has been difficult to advance meaningful and lasting definitions of unfair practices.¹⁸⁵ However, the

¹⁷⁷ See *id.* at paras. 1, 2. Carving out a caveat for non-commercial collaborative projects. DMA, *supra* note 1, at para. 2.

¹⁷⁸ OECD HANDBOOK, *supra* note 7, at 39.

¹⁷⁹ ZUBOFF, *supra* note 51, at 30; Mariana Mazzucato, Josh Entsminger & Rainer Kattel, *Reshaping Platform Driven Digital Markets*, in MOORE, *supra* note 61, at 20.

¹⁸⁰ See *Proposal for a Regulation of the European Parliament and of the Council on a Single Market for Digital Services (Digital Services Act) and Amending Directive 2000/31/EC*, at 66, COM (2020) 825-final (Dec. 15, 2020) [hereinafter *Proposal for DSA*], at art. 36 (on proposed codes of conduct, which could have immediate applicability for online marketplaces).

¹⁸¹ DMA, *supra* note 1, at paras. 33, 34 and art. 8.

¹⁸² *Id.* at art. 13 (4).

¹⁸³ *Id.* at para. 2.

¹⁸⁴ *Id.*

¹⁸⁵ See OECD HANDBOOK, *supra* note 7, at 17, 27, 38-39 (discussing unfair competitive advantages of gatekeepers such as leveraging through bundling or tying, access issues,

DMA has made remarkable progress by obligating gatekeepers to comply with its provisions, irrespective of the contractual, commercial, technical (or otherwise) nature of their obligations. This pragmatic approach avoids the vicious circle of responsibility and blame; for example, consumers who disregard privacy jeopardize not only their own privacy but also consumer sovereignty.¹⁸⁶

Notable examples of unfair practices¹⁸⁷ include processing personal data for advertising and third-party services;¹⁸⁸ combining data across several platforms; applying different prices and conditions to third-party intermediation;¹⁸⁹ self-preferencing to limit rival promotions¹⁹⁰ of content, subscriptions, or features; failing to apply FRAND terms; lacking interoperability with ancillary payment or identification services, and also with technical support for in-app purchases,¹⁹¹ browsers, operating systems, virtual assistants,¹⁹² messages, images, or shared videos subject to encryption;¹⁹³ lacking portability¹⁹⁴ or transparency¹⁹⁵ for advertisers and publishers in relation to prices, fees, deductions, surcharges and, subject to consent,¹⁹⁶ to any metrics used for their calculation; and tying through pre-installed software apps.

Furthermore, a prescriptive obligation bars the unfair use of personal data that are not publicly available and of aggregated user-experience data inferred from or collected through a commercial activity, such as clicks, searches, views, or voice data.¹⁹⁷ Previously, competition law attempted to

exclusivity, predatory pricing, and data combinations. The predatory-pricing test is not fit for purpose in the digital world and exclusive dealing limits interoperability.)

¹⁸⁶ Anca Chirita, *Abuse of Global Platform Dominance or Competition on the Merits?*, 33 LOY. CONSUMER L. REV. 1, 27 (2021); Laura Alexander, *Privacy and Antitrust at the Crossroads of Big Tech*, AM. ANTITRUST INST. 12 (Dec. 16, 2021).

¹⁸⁷ Proposal for DMA, *supra* note 6, at art. 5 under Chapter III.

¹⁸⁸ DMA, *supra* note 1, at art. 5 (2).

¹⁸⁹ Proposal for DMA, *supra* note 6, at art. 5 (b).

¹⁹⁰ *Secrétariat général du Conseil*, *supra* note 97, at art. 5 (4) and (5).

¹⁹¹ DMA, *supra* note 1, at para. 56 and art. 5 (7) (on access to functionality for authentication).

¹⁹² *Id.* at para. 55 (referencing to rival operating systems or virtual assistants).

¹⁹³ Proposal, *supra* note 6, at art. 6 (f) and (h); for the last two options, see *Secrétariat général du Conseil*, *supra* note 97, at para. 55, art. 5 (7), 6 (7) and 7. In addition, the collection of data must be “strictly necessary” for interoperability, see art. 7 (8).

¹⁹⁴ *Secrétariat général du Conseil*, *supra* note 97, at art. 6 (9); DMA, *supra* note 1, at para. 59 and art. 6 (9) (on experience data).

¹⁹⁵ *Id.* *Secrétariat général du Conseil*, at para. 45 and art. 5 (9). The latter made confidentiality redundant; DMA, *supra* note 1, at para. 45 and art. 5 (9) (on the method of calculation).

¹⁹⁶ In the absence of consent, a daily average figure should instead be offered.

¹⁹⁷ See *Proposal for DMA*, *supra* note 6, Art. 6 (a); *Draft Proposal for DMA*, *supra* note 118, at Art. 6 (1); DMA, *supra* note 1, at Art. 6 (2).

differentiate between exclusionary and exploitative abuses of data. Under the DMA,¹⁹⁸ an extensive interpretation of unfair competition includes the abuse of data combination and access to data. Other notable obligations concern the interoperability of software, hardware, and interpersonal communications, including messages, images, voice, chats, videos, and calls;¹⁹⁹ portability;²⁰⁰ discriminatory self-preferencing; tying or bundling; and the abuse of algorithmic pricing. All of the above are unfair practices that can exclude rivals or exploit consumers.

The DMA encourages complainants to blow the whistle against unfair practices, such as discriminatory access, de-listing, and account closures.²⁰¹ Gatekeepers should not prevent or restrict businesses or consumers from complaining to public authorities and courts.²⁰² Similarly, the U.S. draft proposal bans retaliation against businesses raising similar concerns.²⁰³ In addition, the DMA remains committed to complying with consumer-protection, cyber-security, product-safety, and data-protection regulations.²⁰⁴

Data Leveraging

Antitrust law does not prohibit the strategic leveraging of a monopoly position²⁰⁵ to distort competition. The rejection²⁰⁶ of leveraging has been attributed to a lack of monopolization²⁰⁷ of the secondary market and to a putative causal link²⁰⁸ between a monopoly and its complementary product,²⁰⁹ especially involving hidden motives for data monopolization. Ownership of, or access to, data can only “entrench”²¹⁰ a monopoly and allow it to leverage

¹⁹⁸ See DMA, *supra* note 1, at art. 5.

¹⁹⁹ DMA, *supra* note 1, at para. 64 (on not undermining “a high level of security and data protection”) and art. 6 (7).

²⁰⁰ OECD HANDBOOK, *supra* note 7, at 67.

²⁰¹ *Draft Proposal for DMA*, *supra* note 118, at para. 42; DMA, *supra* note 1, at para. 42.

²⁰² DMA, *supra* note 1, at art. 5 (6).

²⁰³ S. 2992, 117th Cong. § 3 (9) (2021).

²⁰⁴ DMA, *supra* note 1, at para. 65.

²⁰⁵ On the demise of the doctrine of monopoly leveraging, *see, e.g.*, Erik Hovenkamp, *The Antitrust Duty to Deal in the Age of Big Tech*, 131 YALE L. J. 1523, 1545 (2022) (explaining the demise of the doctrine of monopoly leveraging); *see, e.g.*, FRANCESCO DUCCI, NATURAL MONOPOLIES IN DIGITAL PLATFORM MARKETS 69 (2020).

²⁰⁶ For the Chicago School’s criticism of leveraging, *see, e.g.*, CHIARA FUMAGALLI, MASSIMO MOTTA & CLAUDIO CALCAGNO, EXCLUSIONARY PRACTICES: THE ECONOMICS OF MONOPOLIZATION AND ABUSE OF DOMINANCE 352, 366 (2018).

²⁰⁷ *See, e.g.*, Herbert Hovenkamp, *Antitrust and Platform Monopoly*, 130 YALE L.J. 1964 (2021).

²⁰⁸ On earlier leveraging cases, *see* GIORGIO MONTI, EC COMPETITION LAW 195 (2007).

²⁰⁹ *See, e.g.*, RICHARD A. POSNER, ANTITRUST LAW 199 (2nd ed. 2001).

²¹⁰ Persuasively on digital leveraging, *see* Lina Khan, *Amazon’s Antitrust Paradox*, 126 YALE L.J. 710, 783 (2016).

its dominant position into emerging markets where those data hold relevance. Indeed, data “hoarding”²¹¹ causes an unfair competitive advantage because it is a means of achieving monopolistic data leveraging.²¹² Notably, Amazon Go and Echo have leveraged unparalleled²¹³ consumer purchasing data to expand into automated convenience stores, driven by algorithms and sensor fusion, and smart-speaker markets.

Famously, Microsoft strategically leveraged its Windows operating-system dominance²¹⁴ to gain an unfair competitive advantage in emerging markets involving software servers and media players. Microsoft also engaged in tying and refused to supply interoperability information. In *Google Shopping*, the General Court reiterated the orthodox position that the “mere extension”²¹⁵ of a monopoly to a neighboring market is not anticompetitive. This is irrespective of whether leveraging leads to the exit or marginalization of rivals. Some commentators²¹⁶ endorsed *Google Shopping* for applying leveraging to a novel type of abuse, known as “favoring”. However, the Court reiterated that leveraging could embrace various forms of anticompetitive practices, including tying or bundling, margin squeezing, and loyalty rebates.²¹⁷ The Court also clarified that the EC had not relied on leveraging alone.²¹⁸ Instead, *Google Shopping* involved an active form of discrimination against rivals²¹⁹ in the treatment of search results, namely an exclusionary demotion.

Similarly, Apple leveraged its iOS and App Store to discriminate against rivals.²²⁰ Apple’s strategy was to leverage²²¹ its monopoly on the market for apps distribution on iOS devices to give preferential treatment to Apple apps.

²¹¹ STUCKE, *supra* note 29, at 32.

²¹² *Id.* at 55 (explaining how data-opolies leveraged their data to remain ahead of the game of competition); *id.* at 66 (explaining leveraging and its “colonizing” power).

²¹³ *See, e.g.*, SCOTT GALLOWAY, *THE FOUR: THE HIDDEN DNA OF AMAZON, APPLE, FACEBOOK, AND GOOGLE* 29-30 (2017).

²¹⁴ *See* ROBERT O’DONOGHUE & JORGE PADILLA, *THE LAW AND ECONOMICS OF ARTICLE 102 TFEU* 307-8 (3rd ed. 2020).

²¹⁵ *Google Shopping*, *supra* note 15, at ¶ 162, 610; for the marginalization of rivals, *see* Case C-209/10, *Post Danmark A/S v. Konkurrencerådet*, EU:C:2012:172, ¶ 22 (Mar. 27, 2012); Case C-413/14 P, *Intel Corp. v. European Commission*, EU:C:2017:632, ¶ 134 (Sept. 6, 2017).

²¹⁶ O’DONOGHUE & PADILLA, *supra* note 223, at 275.

²¹⁷ *Google Shopping*, *supra* note 15, at ¶ 163-64, 166 (explaining how the Court did not solely rely on leveraging); Case T-201/04, *Microsoft v. Comm’n*, 2007 E.C.R. II-3619, ¶ 1344 (discussing tied sales); Case T-336/07, *Telefónica and Telefónica de España v. Comm’n*, ECLI:EU:T:2012:172, ¶ 146 (Mar. 29, 2012) (discussing margin squeeze); Case T-203/01, *Michelin v. Comm’n*, 2003 E.C.R. II-4082, ¶ 56 (discussing loyalty rebates).

²¹⁸ *Google Shopping*, *supra* note 15, at ¶ 175.

²¹⁹ *Id.* at ¶ 240.

²²⁰ INVESTIGATION, *supra* note 15, at 16.

²²¹ *Id.* at 361.

Previously, the U.S. Subcommittee on Antitrust²²² had issued a stark warning about gatekeepers who abused power to force economically dependent businesses to submit valuable data to leverage their dominance into neighboring markets. For example, Google leveraged its dominance into universal-search advertising and YouTube video-ad serving²²³ to foreclose rivals in emerging markets. Google's strategy of diversification²²⁴ successfully leveraged its data-driven competitive advantage over voice and location data²²⁵ into the AI markets for digital assistants and robotics, such as self-driving vehicles. Amazon also acquired Kiva Systems²²⁶ for warehouse robotics and leveraged access to seller data on its marketplace by replicating successful products.²²⁷

Under the DMA, unfair leveraging²²⁸ consists in misusing a data advantage from one business activity to expand into new ones and, subsequently, to control an entire ecosystem. Earlier drafts²²⁹ considered the way in which structural leveraging tended to become burdensome. Building upon conglomerates or vertical integration,²³⁰ gatekeepers may cross-subsidize core platform services or combine cross-platform data to leverage a significant position elsewhere. However, because data are a key input, required to compete, higher investment costs represent a significant barrier to market entry.

Data Combination

“Data combination” is an unfair method of aggregation, where data has previously been collected from various, multiple sources.²³¹ Aggregated data can be integrated into a set of algorithms²³² to improve the accuracy of various working hypotheses about customer behavior, changing patterns, and effective responses. However, the alarm has been raised over a “major risk”²³³ stemming from aggregation, where data combination merges everything into

²²² *Id.* at 192.

²²³ *Id.* at 211.

²²⁴ PETIT, *supra* note 124, at 109.

²²⁵ Ariel Ezrachi & Maurice E. Stucke, *Antitrust Enforcement and Market Power in the Digital Age: Is Your Digital Assistant Devious?*, in RECONCILING EFFICIENCY AND EQUITY: A GLOBAL CHALLENGE FOR COMPETITION POLICY, at 233.

²²⁶ GALLOWAY, *supra* note 222, at 50.

²²⁷ INVESTIGATION, *supra* note 15, at 277.

²²⁸ Proposal for DMA, *supra* note 6, at para. 27 (intended to prevent unfair leveraging); DMA, *supra* note 1, at para. 3 (on barriers to market entry, such as high investment costs with data being a key input), para. 44 (on a conditional subscription required for the use of a core platform that could lead to a data advantage).

²²⁹ See *Draft Proposal for DMA*, *supra* note 118, at para. 3.

²³⁰ *Id.* at art. 3 (8); DMA, *supra* note 1, at art. 3 (8).

²³¹ SPINELLO, *supra* note 83, at 368.

²³² IANSITI & LAKHANI, *supra* note 72, at 55.

²³³ SPINELLO, *supra* note 83, at 368.

a single dataset.

Scholars have helpfully proposed a tripartite categorization of data combination: the first category comprises consumer data from cookies offering cross-platform access and loyalty programs; the second includes consumer data swaps with trusted partners to expand a network; and the third consists of data aggregators from publishers.²³⁴

Under the DMA, gatekeepers should not combine data from other core platforms, including third parties; use cross-platform data; or register users for similar purposes.²³⁵ Otherwise, a suitable alternative must be made available. For data protection and privacy purposes, explicit consent²³⁶ must be secured in advance, subject to data anonymization. If consent is refused or withdrawn, there can be no further similar requests for one year.²³⁷

In *Meta*,²³⁸ Facebook automatically signed up its users for data collection, not only from the Facebook group, which includes Instagram and WhatsApp, but also from third-party websites and app-integrated interfaces and cookies. By linking such aggregated data²³⁹ to individual user accounts, Facebook achieved a perfect personalized combination of data. However,²⁴⁰ national competition authorities cannot be precluded from taking into account the incidental question²⁴¹ of whether Facebook acted in accordance with the Union data-protection framework, especially where sensitive data were profiled for data combination. This contextual interpretation argues that the legal and economic context matters – in this case, data combination for targeted advertising. Furthermore, the incidental question above cannot be examined in splendid isolation, without looking at all of the circumstances of the case. Specifically, data combination can be used as a “vital clue”²⁴² to capture unfair methods of competition. The final answer depends on whether data-protection law allows deep consumer profiling of sensitive data.²⁴³ Otherwise, the unfair processing of such data breaches fundamental rights and freedoms.²⁴⁴

Codifying the *Facebook* case,²⁴⁵ the DMA protects the right to opt for a

²³⁴ VENKATESAN & LECINSKI, *supra* note 114, at 105.

²³⁵ DMA, *supra* note 1, at art. 5 (2).

²³⁶ *Id.* at art. 13 (5).

²³⁷ *Id.* at art. 5 (2).

²³⁸ Meta Platforms, Inc., *supra* note 46, at ¶ 10.

²³⁹ *Id.* at ¶ 46.

²⁴⁰ *Id.* at ¶ 23.

²⁴¹ *Id.* at ¶ 33.

²⁴² *Id.* at ¶ 24 (where the abuse of a dominant position may incidentally analyze data combination without prejudice to the data-protection law).

²⁴³ Meta Platforms, Inc., *supra* note 46, at ¶ 38, 46.

²⁴⁴ *Id.* at ¶ 34.

²⁴⁵ Chirita, *supra* note 186, at 32. On Bundeskartellamt’s data-protection analysis for antitrust purposes, see Peter G. Picht & Gaspare Loderer, *Framing Algorithms – Competition Law and (Other) Regulatory Tools*, in MAX PLANCK INST. FOR INNOVATION AND

less personalized experience. Gatekeepers should, therefore, offer a user-friendly alternative that enables the continued use of the platform.²⁴⁶ However, no alternative can deceive or manipulate users into giving their consent or compromise service quality.

Earlier drafts included the data combination of end users' personal data by third parties, irrespective of aggregation.²⁴⁷ This was extended to include data that had been collected on or inferred from the core platform by third parties. The sole exception was in cases where explicit consent had previously been granted. So far, matching data from third-party vendors is possible simply by asking for a call-back.²⁴⁸ In *Meta*,²⁴⁹ it was persuasively argued that the processing of sensitive data must be "manifestly public" so that users are fully and explicitly aware of the data combination. Obviously, this standard cannot be met by merely visiting websites or apps, entering data, or clicking on like buttons.²⁵⁰

Rightfully, the DMA bans the combination of data from multiple sources.²⁵¹ Previously, *Google Android*²⁵² combined data from multiple apps, such as Google Chrome, Maps, YouTube, and Gmail, obtaining physical and virtual location data and user preferences for targeted advertising. The recognition of data combination as anticompetitive goes, indeed, the extra mile. The relevant data were gleaned from "super-user" profiles²⁵³ for profit, earned from behavioral advertisements. Similarly, YouTube and Facebook used machine-generated data²⁵⁴ from paid advertising campaigns. The exploitation of data combination via software apps for advertising purposes²⁵⁵

COMPETITION RESEARCH PAPER SERIES no. 18, 25 (2018).

²⁴⁶ DMA, *supra* note 1, at paras. 37, 38.

²⁴⁷ *Draft Proposal for DMA*, *supra* note 118, at art. 5 (2), 6 (10).

²⁴⁸ VENKATESAN & LECINSKI, *supra* note 114, at 103.

²⁴⁹ Meta Platforms, Inc., *supra* note 46, at ¶ 42.

²⁵⁰ *Id.* at ¶ 43-44.

²⁵¹ *Proposal for DMA*, *supra* note 6, at para. 36; ANNA BARKER, CONSUMER DATA AND COMPETITION: A NEW BALANCING ACT FOR ONLINE MARKETS? GOING DIGITAL TOOLKIT POLICY NOTE, ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT [OECD] 8 (Feb. 4, 2021) (explaining the added value of data combinations) [hereinafter OECD TOOLKIT]; *Draft Proposal for DMA*, *supra* note 118, para. 36-7; DMA, *supra* note 1, para. 37.

²⁵² Google Android, *supra* note 10, at ¶ 109-10, 114, 739, 997; *see also* Case T-604/18, Google LLC & Alphabet, Inc. v. Eur. Comm'n, ECLI:EU:T:2022:541 (Sep. 14, 2022) (confirming *Google Android* on appeal); Press Release, Court of Justice of the European Union, The General Court Largely Confirms the Commission's Decision That Google Imposed Unlawful Restrictions on Manufacturers of Android Mobile Devices and Mobile Network Operators in Order to Consolidate the Dominant Position of Its Search Engine (Sep. 14, 2022) (Memo/147/22).

²⁵³ Google Android, *supra* note 10, ¶ 1348.

²⁵⁴ VENKATESAN & LECINSKI, *supra* note 114, at 102.

²⁵⁵ DMA, *supra* note 1, at para. 36.

could apply to Apple.²⁵⁶ Finally, in *Meta*,²⁵⁷ the novelty of abuse rendered invalid the consent of users, due to Facebook's combination of sensitive data.

Together at Last? The Unfair Procedural Imposition of Substantive but Excessive Terms and Conditions

Historically, the application of Article 102 to unfair terms falling under the remit of abusive exploitation was regarded²⁵⁸ as a consumer-protection function of competition law. Therefore, it was entrusted to unfair methods of competition or trading laws.

Imposing unfair contractual terms and conditions can result in intermediation or direct-sale platforms offering less favorable prices or conditions, thus limiting consumer choice and business freedom.²⁵⁹ Therefore, under the DMA, gatekeepers should not prevent similar services²⁶⁰ from being offered at different prices and under different conditions through third-party intermediation or direct-sale channels. This extends to promotional offers.²⁶¹ Other unfair terms and conditions include higher commission rates, unjustified de-listing,²⁶² and confidentiality clauses that silence complainants. Similarly, the U.S. Antitrust Subcommittee mentioned Amazon's threat of product de-listing to enable its virtual assistant, Alexa.²⁶³

To safeguard consumer choice, gatekeepers should not interfere with the right to choose an alternative distribution channel;²⁶⁴ or to acquire, access, or use content, subscriptions, or features outside the core platform; these include software apps, app stores, and virtual assistants.²⁶⁵ However, platform

²⁵⁶ Google Android, *supra* note 10, at ¶ 153 (discussing the search-based advertising business model in contrast to Apple's vertical integration and mobile sales business model).

²⁵⁷ Meta Platforms, Inc., *supra* note 46, at ¶ 78 (4).

²⁵⁸ O'DONOGHUE & PADILLA, *supra* note 223, at 1043. For earlier cases of abusive contractual terms, see Case C-127/73, *Belgische Radio en Televisie v. SABAM*, ECLI:EU:C:1974:25 (Jan. 30, 1974); IV/29.971—GEMA II, Comm'n Decision, 1981 O.J. (L 94) 14; Case IV/31043—Tetra Pak II, Comm'n Decision, 1992 O.J. (L 72) 31; Case IV/36.010-F3—Amministrazione Autonoma dei Monopoli di Stato, Comm'n Decision, 1998 O.J. (L 252) 56; Case COMP/D-3/34493—Duales System Deutschland, Comm'n Decision, 2001 O.J. (L 166) 16.

²⁵⁹ *Draft Proposal for DMA*, *supra* note 118, at para. 39, art. 5 (3); DMA, *supra* note 1, at para. 39.

²⁶⁰ DMA, *supra* note 1, at art. 5 (3).

²⁶¹ *Id.* at art. 5 (4).

²⁶² *Proposal for DMA*, *supra* note 6, at paras. 37, 39; STUCKE, *supra* note 29, at 41 (discussing de-listing apps from the Apple App Store).

²⁶³ INVESTIGATION, *supra* note 15, at 312 (discussing predatory pricing for Amazon Echo).

²⁶⁴ DMA, *supra* note 1, at para. 50.

²⁶⁵ *Proposal for DMA*, *supra* note 6, at para. 38; *id.* DMA, *supra* note 1, at para. 41, art. 5 (5).

use should not be made conditional upon subscription or registration.²⁶⁶

A UK class action against procedural unfairness has targeted Facebook for its imposition of unfair terms and conditions²⁶⁷ on users. The standard terms were so excessively long and complex that signing up to social networking became unavoidable. Equally and substantively unfair was Facebook's zero price paid for user data, in view of the expensive rents that Facebook extracted from profitable advertisements. User access was unfairly made conditional on the availability of personal data for commercial pursuits. Ultimately, users had no choice but to surrender a "disproportionate and unnecessary" amount of their personal data. However, the exploitation of personal data cannot disregard the above procedural and substantive unfairness. The cause²⁶⁸ of procedural unfairness lies in the inferior bargaining power of Facebook users.

In relation to substantive unfairness, Facebook's zero price for personal data and Apple's excessive fees²⁶⁹ for rivals in the downstream markets for music streaming, news, video content, gaming and payments are polar opposites. In addition, Apple Pay enjoys a competitive advantage because no other alternatives are accepted.²⁷⁰ Following the installation of Fortnite by Epic Games, which offered 10–20% discounts on payments, Apple retaliated by disabling Fortnite updates.²⁷¹ Despite this, Apple's unfair standard terms were not subject to negotiation.²⁷²

The UK Competition Appeal Tribunal (hereinafter *CAT*) also examined claims of procedural and substantive unfairness. The evidence of procedural unfairness included Apple's imposition of restrictive terms and conditions on rival app developers.²⁷³ Rivals were forced to distribute Apple iOS via the Apple App Store exclusively.²⁷⁴ Apple charged 19.6 million consumers substantively unfair and excessive prices and rival developers 30% commission

²⁶⁶ DMA, *supra* note 1, at art. 5(8).

²⁶⁷ Notice of an Application to Commence Collective Proceedings under Section 47 B of the UK Competition Act 1998, Case 1433/7/7/22 (Mar. 08, 2022) [hereinafter *Competition Notice*].

²⁶⁸ *See e.g.*, Chirita, *supra* note 186, at 30 (discussing the Bundeskartellamt's case against Facebook.); GINTARĖ SURBLYTĖ-NAMAVIČIENĖ, COMPETITION AND REGULATION IN THE DATA ECONOMY: DOES ARTIFICIAL INTELLIGENCE DEMAND A NEW BALANCE 258 (2020) (discussing Facebook's exploitative abuse, due to consumers not reading such terms and conditions).

²⁶⁹ Damien Geradin & Dimitrios Katsifis, *The Antitrust Case Against the Apple App Store*, 17 J. OF COMP. L. & ECON. 502, 533 (2021).

²⁷⁰ INVESTIGATION, *supra* note 15, at 343, 354.

²⁷¹ *Id.* at 346.

²⁷² EZRACHI & STUCKE, *supra* note 136, at 171.

²⁷³ *Kent v. Apple Inc. & Apple Distribution Int. Ltd.*, [2022] CAT 28, ¶ 3.

²⁷⁴ INVESTIGATION, *supra* note 15, at 341 (discussing Apple prohibiting any alternative to its App Store).

fees²⁷⁵ for downloads and in-app purchases. These extortionate fees made it impossible²⁷⁶ for Spotify to compete effectively against Apple Music. Because consumers had no other choice, there was a mismatch between their willingness to pay and Apple's price, namely its economic value.²⁷⁷ The CAT considered whether such excessive fees had been paid under duress²⁷⁸ by developers who were economically dependent on Apple. Ultimately, the CAT dismissed²⁷⁹ Apple's claim that its unfair pricing system lacked a reasonable prospect of success.

Finally, the exploitative fees that Amazon imposed on dependent sellers in its marketplace were cited for substantive unfairness. These fees increased from 19% to 30%, being worth around \$39.7 billion.²⁸⁰ Ultimately, in *Meta*, procedural unfairness abolished the "freedom of consent."²⁸¹ Facebook users had no genuine free choice, being unable to refuse or withdraw consent without suffering detriment. Furthermore, due to Facebook's market power, there was a "clear imbalance" between this platform and its users.²⁸²

Discriminatory Terms and Conditions

Due to the open-ended nature of the antitrust prohibition of abuse, in *Purple Parking*,²⁸³ economic discrimination was featured as a "standalone"²⁸⁴ form of abuse. The case concerned contractual terms and conditions of access to Heathrow Terminals. By enforcing a strict "duty of non-discrimination",²⁸⁵ there was no need to wait until competition was actually eliminated. Leading commentators²⁸⁶ recognized "discriminatory" abuse, which harms competition and exploits consumers through discriminatory prices or trading conditions.

Under the DMA, unfair practices include discriminatory conditions of access, the unjustified closure of business accounts, and disproportionate

²⁷⁵ *Kent v. Apple Inc.*, *supra* note 282, at ¶ 8; *Epic Games Inc. v. Apple Inc.*, 559 F. Supp. 3d 898, 923 (N.D. Cal. 2021); INVESTIGATION, *supra* note 15, at 342 (discussing 30% commission fees sustained for over a decade).

²⁷⁶ IANSITI & LAKHANI, *supra* note 72, at 194.

²⁷⁷ *Kent v. Apple Inc.*, *supra* note 282, at ¶ 74.

²⁷⁸ *Id.* at ¶ 81; *see id.* at ¶ 90 (3) (discussing Apple's gatekeeper status).

²⁷⁹ *Kent v. Apple Inc.*, *supra* note 282, at ¶ 91; INVESTIGATION, *supra* note 15, at 16 (discussing the supra-competitive prices of the Apple App Store).

²⁸⁰ INVESTIGATION, *supra* note 15, at 274.

²⁸¹ *Meta Platforms Inc.*, *supra* note 46, at ¶ 73.

²⁸² *Id.* at ¶ 75.

²⁸³ *Purple Parking Ltd & Anor v. Heathrow Airport Ltd.*, [2011] EWHC 987 (Ch) (15 April 2011), (<https://perma.cc/WC4T-EW7C>).

²⁸⁴ O'DONOGHUE & PADILLA, *supra* note 223, at 665.

²⁸⁵ *Id.*

²⁸⁶ THE EC LAW OF COMPETITION, § 4.253 (Jonathan Faull & Ali Nikpay eds., 3d ed. 2014).

termination conditions.²⁸⁷ “Favorable treatment” in ranking and related indexing and crawling should be avoided to allow for transparent, fair, and non-discriminatory conditions.²⁸⁸ An earlier draft²⁸⁹ included “differentiated or preferential” treatment in ranking, indexing, and crawling to achieve “relative” prominence. The final wording, however, follows an evolutionary approach to the differential treatment developed from the principle of non-discrimination. This principle has paved the way for self-preferencing to emerge. In conclusion, irrespective of whether gatekeepers offer complimentary services or not,²⁹⁰ their terms and conditions must not discriminate against rivals.

Self-Preferencing through Ranking and Prominent Display

Self-preferencing concerns a myriad of commercial intermediation and universal search-engine platforms. Notably, Google reserved a higher ranking for its own Search and Chrome; the latter were prominently placed on mobile devices.²⁹¹ Similarly, Google Play Store acted as gatekeeper by self-favoring its own apps. Amazon Alexa, too, self-favored Amazon Basics and Prime Music.²⁹² Due to its unique, competitive advantage in relation to aggregated seller data, Amazon can effectively cherry-pick²⁹³ only the most profitable products. Similarly, the Apple App Store self-favors its own apps in search results.²⁹⁴

The cause of self-preferencing lies in the inherent conflicts of interest that arise in vertical integration.²⁹⁵ *Google Shopping* was prominently positioned at the top of the page and displayed in a rich format.²⁹⁶ This “favoring”²⁹⁷ led to a lessening of competition and deviated from the principles of meritocratic competition.²⁹⁸ The fact that Google Shopping self-promoted its own internal

²⁸⁷ Proposal for DMA, *supra* note 6, at para. 39; Draft Proposal for DMA, *supra* note 118, at art. 6 (13); DMA, *supra* note 1, at art. 6 (13).

²⁸⁸ Proposal for DMA, *supra* note 6, at art. 6 (d); DMA, *supra* note 1, at art. 6 (5).

²⁸⁹ Draft Proposal for DMA, *supra* note 118, at para. 52.

²⁹⁰ DMA, *supra* note 1, at para. 33.

²⁹¹ INVESTIGATION, *supra* note 15, at 212, 225 (discussing Chrome’s gatekeeper power).

²⁹² *Id.* at 310.

²⁹³ ROBIN GASTER, BEHEMOTH, AMAZON RISING: POWER AND SEDUCTION IN THE AGE OF AMAZON 189 (2021).

²⁹⁴ INVESTIGATION, *supra* note 15, at 359.

²⁹⁵ DMA, *supra* note 1, at para. 51 (noting this also applies to indexing and crawling).

²⁹⁶ Google Shopping, *supra* note 15, at ¶ 182 on how Google initially ranked according to the same criteria.

²⁹⁷ Google Shopping, *supra* note 15, at ¶ 168–69, 175; *see also* Google Shopping, *supra* note 15, at ¶ 248 (discussing the lack of national recognition which does not bind E.U. Courts); GERADIN & KATSIFIS, *supra* note 278, at 580 (discussing the Apple App Store favoring its own apps).

²⁹⁸ Google Shopping, *supra* note 15, at ¶ 185.

results over those of its rivals constituted an “abnormality” and a “difference in treatment”.²⁹⁹ Compared to other infrastructures, universal search must remain open³⁰⁰ and, most importantly, include results from external sources. For the Court, *Google Shopping* was a simultaneous “combination”³⁰¹ between self-promotion and the demotion of rivals by means of “adjustment algorithms”.³⁰² Previously, scholars³⁰³ had endorsed an exclusionary theory of harm, based on demotion and self-prominence. Similarly, Amazon’s conduct was described as a “combination”³⁰⁴ of self-promotion, misuse of confidential data, and degradation of interoperability, intended to demote rivals. By reducing the prominence of rivals in Amazon search results³⁰⁵ (while charging them higher fees for listing) Amazon engaged in exclusionary self-preferencing.

In contrast to Amazon’s approach, Google opted for a “less favorable” and disproportionate demotion of its rivals.³⁰⁶ Google systematically ranked³⁰⁷ its own content above that of its rivals, irrespective of quality or relevance. Similarly, Amazon Buy Box was prominently displayed as it offered the “Buy Now” and “Add to Basket” options. Primarily due to seller performance and customer satisfaction,³⁰⁸ only selected sellers could have their products delivered via Amazon Prime.³⁰⁹ In contrast to a traditional shopping

²⁹⁹ *Google Shopping*, *supra* note 15, at ¶ 176, 179, 238; Hovenkamp, *supra* note 214, at 1546 (discussing the misdiagnosis and endorsement of a refusal to deal, which could be discriminatory); INVESTIGATION, *supra* note 15, at 227 (discussing a similar self-promotion strategy to give an undeserved boost to Google Chrome).

³⁰⁰ *Google Shopping*, *supra* note 15, at ¶ 178.

³⁰¹ *Google Shopping*, *supra* note 15, at ¶ 187, 372. The latter highlighted that self-promotion cannot be analyzed in isolation from demotion.

³⁰² *Google Shopping*, *supra* note 15, at ¶ 245; INVESTIGATION, *supra* note 15, at 188 (finding automatically adjusted algorithms placed rivals at a competitive disadvantage); Hovenkamp, *supra* note 214, at 1545-46 (arguing Google’s algorithmic change constitutes a “naked” exclusion).

³⁰³ FUMAGALLI, *supra* note 215, at 606.

³⁰⁴ INVESTIGATION, *supra* note 15, at 325.

³⁰⁵ See JONATHAN B. BAKER, *THE ANTITRUST PARADIGM: RESTORING A COMPETITIVE ECONOMY* 126 (2019).

³⁰⁶ *Google Shopping*, *supra* note 15, at ¶ 288, 292.

³⁰⁷ INVESTIGATION, *supra* note 15, at 382 (finding demoted publishers sustained financial losses).

³⁰⁸ Hovenkamp, *supra* note 214, at 1546 (Buy Box’s “winner” is a single reseller, selected on the basis of consumer protection criteria such as quality, reliability, shipping speed and customer reviews. *Id.*).

³⁰⁹ Amazon wants Prime items to arrive before consumers even think about ordering them. See e.g., GASTER, *supra* note 302, at 84 (Amazon Day was created due to environmental concerns. *Id.* at 78.) One commentator predicted that, at its present growth rate, more households will enjoy Prime membership than cable television. See GALLOWAY, *supra* note 222, at 48.

experience, Amazon Prime not only saved time³¹⁰ but also offered the convenience of a “software-enabled logistics”³¹¹ system. As previously mentioned, Amazon’s exclusionary self-preferencing disadvantaged rivals.³¹² Ultimately, Amazon might be unable to sell its own brands,³¹³ due to claims of anticompetitive conduct against its rivals.

The UK Competition and Markets Authority (hereinafter *CMA*) has opened an investigation³¹⁴ into Amazon’s use of third-party seller data that are not publicly available. Such data fed decisively into the qualifying criteria for the Buy Box and Business Prime delivery. The EC’s offer of commitments will oblige Amazon to refrain from accessing seller data or prominently displaying any seller via Buy Box or Prime;³¹⁵ the latter has used biased algorithmic metrics.³¹⁶ Aggregated seller data are not publicly available; these include sale terms, revenues, shipments, consumer visits, seller performance, and Prime data. Amazon will commit to applying equal treatment to all sellers who seek to qualify for its Buy Box and to display a second competing offer.³¹⁷ In addition, Amazon will undertake to apply non-discriminatory conditions and eligibility criteria to Prime delivery, offering sellers the option of Prime delivery when negotiating their terms and conditions.³¹⁸

All in all, the definition of prominent display can hypothetically apply to Apple for self-preferencing its own software apps;³¹⁹ to Google for its videos³²⁰ shared on YouTube, Reviews, or Flights;³²¹ to Facebook’s social-media news feed; and to virtual assistants such as Amazon Alexa,³²² Google

³¹⁰ BAKER, *supra* note 314, at 136 (describing Amazon’s retail innovations, including zero-priced rapid shipping).

³¹¹ IANSITI & LAKHANI, *supra* note 72, at 12.

³¹² INVESTIGATION, *supra* note 15, at 15, 282.

³¹³ Herbert J. Hovenkamp, *Monopolizing and the Sherman Act*, 2769 FACULTY SCHOLARSHIP AT PENN LAW 52 (2022).

³¹⁴ UK Competition and Mkt. Auth., *Investigation into Amazon’s Marketplace* (July 6, 2022), <https://www.gov.uk/cma-cases/investigation-into-amazons-marketplace>.

³¹⁵ European Commission Press Release IP/22/4522, Antitrust: Commission seeks feedback on commitments offered by Amazon concerning marketplace seller data and access to Buy Box and Prime (July 14, 2022) [hereinafter EC Press Release]; Commitments to Eur. Comm’n at 5, Case COMP/AT.40462 and COMP/AT.40703 (2022).

³¹⁶ Vestager, Executive Vice President, Eur. Comm’n, Speech at the Fordham’s 49th Annual Conference on International Antitrust Law and Policy “Antitrust for the digital age” (Sept. 16, 2022).

³¹⁷ EC Press Release, *supra* note 324.

³¹⁸ *Id.*

³¹⁹ INVESTIGATION, *supra* note 15, at 354. Furthermore, on mobile devices, Chrome could not compete with Apple Safari. *Id.* at 299.

³²⁰ *Draft Proposal for DMA*, *supra* note 118, at para. 51.

³²¹ DUCCI, *supra* note 214, at 51.

³²² INVESTIGATION, *supra* note 15, at 16 (describing Amazon’s self-promotion through the Alexa ecosystem); EZRACHI & STUCKE, *supra* note 234, at 233 (detailing the risk of

Assistant, and Apple Siri.

An earlier draft of the DMA also included “relative prominence” in rankings applicable to social networks or virtual assistants.³²³ By contrast, an earlier U.S. draft embraced a more abstract connotation of self-preferencing by including conditional purchases, access to platforms,³²⁴ and “preferred status or placement” where such conditional offerings were “not part of or intrinsic”³²⁵ to the core platform. A second draft, however, clarified that self-preferencing could materially harm competition, limit rivals’ ability to compete, and discriminate against rivals.³²⁶ Specifically targeting an interface, search, or ranking,³²⁷ self-preferencing should not treat a dominant platform’s own products more favorably, as this violates the expectation of fair and non-discriminatory treatment.

Scholars, too, have endorsed anticompetitive self-preferencing as an exclusionary abuse of data targeting rivals.³²⁸ The materialization of the data abuse mirrors the principle of non-discrimination, with an expectation of equal treatment for rivals.³²⁹ The values of equality and non-discrimination are enshrined in Article 2 TEU,³³⁰ alongside fairness in Article 3 (5) TEU.³³¹ Historically, the ideal of “fair” competition³³² reversed the concept of unfair competition. The above fundamental values laid the foundations for contract, unfair trade, and competition laws.³³³ Earlier commentators³³⁴ dismissed as prescriptive an obligation of non-discrimination: namely, the equal treatment of both trading partners and consumers. This equal-treatment norm was, nonetheless, inferred³³⁵ from both the exclusionary abuse of rivals and

preferential placements of virtual assistants that could act as gatekeepers).

³²³ *Draft Proposal for DMA*, *supra* note 118, art. 2 (22).

³²⁴ H.R. 3825, 117th Cong. § 9 (2021).

³²⁵ S. 2992, 117th Cong. § 3 (5) (2022).

³²⁶ *Id.* at § 3 (1)-(3).

³²⁷ *Id.* at § 3 (9).

³²⁸ STUCKE, *supra* note 29, at 41-42 (describing how self-preferencing can cut off rivals’ “oxygen supply”); CHIRITA, *supra* note 186, at 17.

³²⁹ CHIRIȚA, *supra* note 186, at 29-30 (discussing the normative principle of non-discrimination and the exclusionary demotion of rivals); INVESTIGATION, *supra* note 15, at 188 (describing discriminatory treatment through demotion).

³³⁰ Consolidated Version of the Treaty on the Functioning European Union. art. 2, June 7, 2016 O.J. (C 202).

³³¹ TFEU art. 3. § 5; Anca Daniela Chirita, *Undistorted, (Un)fair Competition, Consumer Welfare, and the Interpretation of Article 102 TFEU*, 33 W. COMP. L. & ECON. REV. 420 (2010).

³³² See Anca D. Chirita, *A Legal-Historical Review of the EU Competition Rules*, 63 INT’L & COMPAR. L. Q. 281, 304-05 (2014).

³³³ KEIRSBILCK, *supra* note 86, at 517.

³³⁴ See Thomas Eilmansberger, *Article 82*, in *COMPETITION LAW: EUROPEAN COMMUNITY PRACTICE AND PROCEDURE* § 2-15-265 (Günter Hirsch et al. eds., 2008).

³³⁵ *Id.* at § 2-15-265, 2-15-269.

the obligation to grant equal access to an essential facility. Similarly, expectations of equal and fair treatment could also be inferred from the transfer of wealth³³⁶ that governs contractual relations between producers and consumers. An unfair transfer of wealth from consumers to monopolists³³⁷ can lead to unjust redistribution and inequality of opportunity by making consumers poorer. This echoes the historic dissatisfaction with the huge concentration of power that enriched just a few trust owners³³⁸ at the expense of equality, economic independence, and contractual freedom.

Accordingly, dominant platforms should offer “equal terms for equal service” regarding price and access.³³⁹ In *Google Shopping*,³⁴⁰ the General Court also endorsed the general principle of equal treatment.³⁴¹ Accordingly, comparable situations must not be treated differently, and different situations must not be treated in the same way.³⁴² If they are, such treatment must be objectively justified. The same principles of equal treatment, non-discrimination, and fairness permeate the special regulation on open Internet access,³⁴³ which refers to the “equality of opportunity between the various economic operators.”³⁴⁴

In the European departure from the classical secondary-line theory of economic discrimination vis-à-vis other trading partners, these digital services are offered on a “freemium”³⁴⁵ basis in return for personal data. By contrast, the U.S. approach³⁴⁶ to third-party discrimination tolerates even aggressive forms of self-promotion. Although the latter equates to an enforcement

³³⁶ See ADI AYAL, FAIRNESS IN ANTITRUST: PROTECTING THE STRONG FROM THE WEAK 181 (2016).

³³⁷ See Lande, *supra* note 27, at 72–73; John B. Kirkwood & Robert H. Lande, *The Chicago School's Foundation is Flawed: Antitrust Protects Consumers, Not Efficiency*, in PITOFSKY, *supra* note 32, at 97.

³³⁸ See PERITZ, *supra* note 144, at 11.

³³⁹ INVESTIGATION, *supra* note 15, at 382.

³⁴⁰ *Google Shopping*, *supra* note 15, at ¶ 155.

³⁴¹ Cf. CROSS & HARRIS, *supra* note 160, at 33 (English law made a clear distinction between statutes and *rationes decidendi*, on the one hand, and persuasive precedents, obiter dicta, and general principles, on the other hand. The former category must be *followed*; the latter one must be *considered* only).

³⁴² Case C-127/07, *Arcelor Atlantique et Lorraine v. Premier Ministre*, ECLI:EU:C:2008:728, ¶ 23 (Dec. 16, 2008).

³⁴³ *Google Shopping*, *supra* note 15, at ¶180 (referencing Counsel Regulation 2015/2120, 2015 O.J. (L 310) (EU)); see ¶ 616 (discussing how Google undermined equality of opportunity).

³⁴⁴ Case C-280/08 P, *Deutsche Telekom v. Eur. Comm'n*, ECLI:EU:C:2010:603, ¶ 230 (Oct. 14, 2010) (discussing certain “differences in treatment”); see NAZZINI, *supra* note 151, at 147 (discussing the application of the principle of “equality of opportunities” to this case).

³⁴⁵ Yeung & Lodge, *supra* note 68, at 9.

³⁴⁶ See Hovenkamp, *supra* note 216, at 2030.

paradox, at the heart of the Sherman Act there is still a “commitment”³⁴⁷ to equality of opportunity for entrepreneurs. In addition, the Robinson-Patman Act³⁴⁸ has specific responsibility for dealing with unfair³⁴⁹ acts of discrimination against rivals. Unfortunately, any difference in price can amount to injury to competition. For zero-priced digital services, this represents yet another regulatory limitation, similar to Article 102 (c).

Furthermore, self-preferencing can also take the form of a refusal to deal or even of a technological tie.³⁵⁰ Tying seeks to ensure that a secondary product remains compatible only with the primary one. Rightfully, antitrust law has traditionally been considered well-equipped to deal with anticompetitive self-preferencing;³⁵¹ in recent developments, however, self-preferencing has been recognized as a standalone form of abuse.

Data-Driven Behavioral Discrimination

A combination of behavioral data gleaned from several platforms—including Google, Facebook, and Apple—has strengthened the theory of abuse of *data-driven behavioral discrimination*.³⁵² In contrast to personalized discrimination exemplified in the *Facebook* case,³⁵³ the abuse of data-driven behavioral discrimination is more pervasive. It can harm an overwhelming number of active consumers on several dominant platforms by abusing data related to personal consumer preferences and individual choices, combining them with sensitive data on location,³⁵⁴ age group, gender, and even income.

³⁴⁷ See Eleanor M. Fox, *The Modernization of Antitrust: A New Equilibrium*, 66 CORNELL L. REV. 1140, 1153-54 (1981).

³⁴⁸ Cf. BORK, *supra* note 27, at 399, 403, 417.

³⁴⁹ Cf. DANIEL J. GIFFORD & ROBERT T. KUDRLE, *THE ATLANTIC DIVIDE IN ANTITRUST: AN EXAMINATION OF U.S. AND EU COMPETITION POLICY* 70 (2015) (on the lack of an express reference to unfairness, although its meaning was unmistakably to protect smaller rivals).

³⁵⁰ Hovenkamp, *supra* note 322, at 49–50.

³⁵¹ *Id.* at 51.

³⁵² Chirita, *supra* note 186, at 28 (discussing global behavioral discrimination).

³⁵³ Oberlandesgericht Düsseldorf, Aug. 26, 2019, Kart 1/19 (V), Justiz (Ger.) https://www.justiz.nrw.de/nrwe/olgs/duesseldorf/j2019/Kart_1_19_V_Beschluss_20190826.html [<https://perma.cc/D96C-FG6A>]; see also Oberlandesgericht Düsseldorf, Mar. 24, 2021, Kart 2/19 (V), Justiz (Ger.) https://www.justiz.nrw.de/nrwe/olgs/duesseldorf/j2021/Kart_2_19_V_Beschluss_20210324.html [<https://perma.cc/5HUK-39CJ>] (referring to the CJEU for a preliminary ruling).

³⁵⁴ See Criado & Such, *supra* note 68, at 88 (discussing location-based discrimination being tantamount to income-based discrimination); Jennifer Valentino-Devries, Jeremy Singer-Vine & Ashkan Soltani, *Websites Vary Prices, Deals Based on Users' Information*, WALL ST. J. (Dec. 24, 2012), <https://www.wsj.com/articles/SB1000142412788732377204578189391813881534> [<https://perma.cc/476H-9EWY>] (discussing how platforms rely on consumer location and their proximity to stores to advance income-based discrimination).

Sensitive data includes health or fitness data in Apple Watch³⁵⁵ and Fitness, Google Fitbit, and Amazon Halo.³⁵⁶ Certain sensitive household data,³⁵⁷ shared with other smart devices, has also raised security concerns.

Google, Apple, Facebook, and Amazon have all cemented monopolistic positions due to their ownership of valuable consumer personal-preferences data.³⁵⁸ This data can be exploited further for huge gains. Notably, the OECD³⁵⁹ has considered the relevance of anonymized consumer data used by AI to the economic analysis of competition law. This data includes behavioral, experiential, locational, and demographic³⁶⁰ consumer data. For example, Apple users cannot opt out of the Find My app—which tracks their location—without going deep into their settings.³⁶¹ Ultimately, Find My, Google Nest, and Google Maps are the latest geolocation apps to enable consumer surveillance.³⁶²

Facebook and Google have succeeded in making unprecedented use of sophisticated software systems,³⁶³ commodifying consumer data for narrowly targeted advertising. This has been a missed opportunity, as enforcers have not yet tested a competition case³⁶⁴ against data-driven behavioral discrimination. Some critics³⁶⁵ have argued that this type of conduct needs further empirical evidence. In contrast, however, a prominent advocate³⁶⁶ against surveillance capitalism has described how consumer experience, with its full range of behavioral data, has remained captive to manipulative machine-driven AI techniques.

On the positive side, a “virtuous cycle”³⁶⁷ can also be used to describe AI. Such services are driven by user engagement, data collection, algorithmic design, prediction, and improvement. The more users a service platform attracts, the more data the platform can collect, which helps to develop better algorithms for a better overall service experience. On the negative side, data

³⁵⁵ See IANSITI & Lakhani, *supra* note 72, at 61.

³⁵⁶ GASTER, *supra* note 302, at 320.

³⁵⁷ ZUBOFF, *supra* note 51, at 7.

³⁵⁸ See SKIDELSKY, *supra* note 33, at 117.

³⁵⁹ OECD TOOLKIT, *supra* note 260, at 6.

³⁶⁰ See GALLOWAY, *supra* note 222, at 188 (discussing the evolutionary curve of demographic to social and behavioral targeting).

³⁶¹ INVESTIGATION, *supra* note 15, at 357.

³⁶² See STUCKE, *supra* note 29, at 244 (discussing the risk of “perfect” surveillance due to mobile devices).

³⁶³ BESSEN, *supra* note 29, at 29.

³⁶⁴ See STUCKE, *supra* note 29, at 142 (favoring a case against Google’s exploitative abuse of data for targeted advertising).

³⁶⁵ See Cooper & Wright, *supra* note 165, at 480.

³⁶⁶ ZUBOFF, *supra*, note 51, at 8.

³⁶⁷ IANSITI & LAKHANI, *supra*, note 72, at 54–55, 63. For example, algorithms can predict content for reading.

extraction and prediction³⁶⁸ can easily be diverted from the virtuous cycle towards insidious surveillance designed for control and domination. Digital dominance cannot deliver equal opportunity to entrepreneurs and consumers simultaneously. The dominance of digital markets imperils equality in the spirit of “citizenry”³⁶⁹ and overthrows natural economic freedoms of choice and action by encouraging dependence on digital gatekeepers.

Furthermore, scholars³⁷⁰ have condemned the unethical digital discrimination implemented by automated machines and data-driven AI for the purpose of price discrimination. These technologies facilitate more intensive consumer profiling³⁷¹ for behavioral manipulation³⁷² and, ultimately, for destructive consumer surveillance. Data-driven advantages such as knowledge of consumer income, age, and gender are driving this unfair treatment of consumers. Due to digital discrimination, consumers are treated differently on the basis of their income, age group,³⁷³ ethnicity, and wealth.³⁷⁴ A notable example of price discrimination is Airbnb’s strategy of optimizing rents through statistics and clustering³⁷⁵ categories of customers, based on the value and location of previously rented properties. In addition, there is increasing empirical evidence of gender-based discrimination.³⁷⁶

In conclusion, consumer data has made it far easier to erode consumers’ buying power, willingness to pay, and knowledge of reservation prices, which, from the perspective of a human-centric approach to competition law, are all part of the consumer’s economic identity relevant to price formation and, thereby erodes their digital footprint.

Personalized Price Discrimination

Personalized price discrimination is defined as the materialization of a combination of personal data gleaned from multiple platforms and used to

³⁶⁸ ZUBOFF, *supra*, note 51, at 67.

³⁶⁹ PERITZ, *supra*, note 144, at 17.

³⁷⁰ CRIADO & Such, *supra*, note 68, at 82; Peter Seele, Claus Dierksmeier, Reto Hofstetter & Mario D. Schultz, *Mapping the Ethicality of Algorithmic Pricing: A Review of Dynamic and Personalized Pricing*, 170 J. OF BUS. ETHICS 703 (2021).

³⁷¹ STUCKE, *supra* note 29, at 211 (on “gaming the system” to achieve the above negative outcomes).

³⁷² See PAOLISA NEBBIA, *Competition Law and Consumer Protection Against Unfair Commercial Practices: A More-than-Complementary Relationship?*, in THE GLOBAL LIMITS OF COMPETITION LAW 129 (Ioannis Lianos & D. Daniel Sokol, ed. 2012) (discussing how market manipulation and behavioral biases demonstrate the intersection of consumer law with competition law).

³⁷³ CRIADO & Such, *supra* note 68, at 83.

³⁷⁴ Seele et al., *supra* note 379, at 712.

³⁷⁵ VENKATESAN & LECINSKI, *supra* note 114, at 73.

³⁷⁶ CRIADO & Such, *supra* note 68, at 84 (on how machine-learning algorithms augment the gender-based segregation of consumers); Seele et al., *supra* note 376, at 712.

match individual preferences to consumers' willingness to pay.³⁷⁷ A classic example is Google matching a user's search intent with a relevant advertisement.³⁷⁸ Such personalized pricing uses consumer-experience data in combination with data mining and analytics techniques to inflict economic harm on consumers. Vulnerable consumers³⁷⁹ are most at risk of algorithmic discrimination, calling for greater transparency and fairness.

Not long ago, this type of personalized price discrimination (based on data mining and analytics) was identified³⁸⁰ as an enforcement gap, as modern antitrust had primarily relied on classical price-discrimination theory. Antitrust law should instead focus on risk-based pricing and the equitable application of data analytics.³⁸¹ As gatekeepers extract higher corporate profits from consumers,³⁸² this unfairness is clearly inequitable and exploitative.

In contrast to traditional competitive fixed-pricing methods, dynamic variable pricing incorporates a time dimension by employing available data,³⁸³ such as supermarket or retailer weekly price changes and store-level scanner data. Variable pricing makes it easier to engage in dynamic games,³⁸⁴ and, over an extended period, to counteract rivals' pricing strategies more effectively.

Although online dynamic pricing cannot discriminate against individual consumers, it can still segregate consumers based on their protected characteristics.³⁸⁵ Famously, Facebook collected sensitive data revealing protected characteristics from dating apps, political parties, and health websites and used this information for data combination through its Business Tools.³⁸⁶ A notable example of personalized price discrimination is Hilton's use of predictive analytics for its price level, based on historic occupancy rates.³⁸⁷ Customer membership or calls that track behavior or preferences, email coupons,

³⁷⁷ Notably, recognized by the OECD. See OECD HANDBOOK, *supra* note 7, at 27.

³⁷⁸ IANSITI & LAKHANI, *supra* note 72, at 145 (discussing network bridging).

³⁷⁹ See Mark McCarthy, *In Defense of Big Data Analytics*, in SELINGER *supra* note 165, at 61, 64.

³⁸⁰ Joshua A. Gerlick & Stephan M. Liozu, *Ethical and Legal Considerations of Artificial Intelligence and Algorithmic Decision-Making in Personalized Pricing*, 19 J. OF REV. & PRICING M.G.M.T. 89 (2021).

³⁸¹ *Id.* at 90 (discussing embedded sensors and dynamic algorithms).

³⁸² Against exploitative excessive pricing, see e.g., OECD HANDBOOK, *supra* note 7, at 44.

³⁸³ See, e.g., PRAVEEN K. KOPALLE & ROBERT A. SHUMSKY, *Game Theory Models of Pricing*, in THE OXFORD HANDBOOK OF PRICING MANAGEMENT 395 (Özalp Özer et al. ed., 2012).

³⁸⁴ *Id.* at 395 (discussing critical variables, such as sales and market shares).

³⁸⁵ Chirita, *supra* note 63, at 176 (discussing effect of dynamic pricing on race, religion, or health); cf. OECD HANDBOOK, *supra* note 7, at 27 (discussing how dynamic pricing does not lead to discrimination).

³⁸⁶ Meta Platforms Inc., *supra* note 46, at ¶ 13.

³⁸⁷ VENKATESAN & LECINSKI, *supra* note 114, at 81.

and loyalty programs are further examples of personalization.³⁸⁸ Through the voice activation functions of Google Assistant, Siri, and Alexa, digital assistants can collect not only location data but also data about past purchases for a personalized AI experience.³⁸⁹

In contrast to generic or irrelevant advertising, targeted or personally tailored advertising has become increasingly effective,³⁹⁰ with the assistance of deep consumer profiling of spending habits and past online purchases. Alongside lower prices and convenience, personalized offers and recommendations are primarily responsible for the success of Amazon.³⁹¹ Finally, personalized freemiums culminated in *Meta Platforms*, a reference for a preliminary ruling from the Higher Regional Court of Düsseldorf to the CJEU in the *Facebook* case.³⁹² Facebook tailored social-media advertisements based on consumers' behavior, interests, buyer power, and personal condition to generate automated user profiles.³⁹³

Unjustified Differentiation Leading to a Disproportionate Disadvantage

An unjustified difference in treatment has long been recognized as an abuse of a dominant position.³⁹⁴ In *Aéroports de Paris*, preferential terms disadvantaged the rival of a dominant undertaking.³⁹⁵ Like the gatekeepers, Google demoted its rivals from access to its universal search.³⁹⁶ Thus, *Google Shopping* was not subject to the same algorithm that applied to rival comparison-shopping websites,³⁹⁷ leading to a "difference in treatment."³⁹⁸ As rivals lost vital traffic, making it difficult to compete, they faced a foreseeable market exit.³⁹⁹

Under the DMA, indexing, crawling, and rankings developed through legal, commercial, or technical means can be linked to visibly differentiated or

³⁸⁸ *Id.* at 100, 103; Starbucks has 17.6 million active members receiving their personalized customer experience. *Id.* at 96.

³⁸⁹ EZRACHI & Stucke, *supra* note 234, at 233.

³⁹⁰ SPINELLO, *supra* note 83, at 369.

³⁹¹ IANSITI & LAKHANI, *supra* note 72, at 12.

³⁹² Meta Platforms Inc., *supra* note 46.

³⁹³ *Id.* at ¶ 9.

³⁹⁴ Google Shopping, *supra* note 15, at ¶ 155 (citing Case C-242/95, *GT-Link v. De Danske Statsbaner*, 1997 E.C.R. I-4453, ¶ 41 [*hereinafter* *GT-Link*]; Case C-821/01 P, *Aéroports de Paris v. Comm'n on E.U. Cmtys.*, 2002 E.C.R. I-9334, ¶ 114 (discussing the prohibition on charging different prices for licensing aircraft services); Case T-228/97, *Irish Sugar plc v. Comm'n on E.U. Cmtys.*, 1999 E.C.R. II-27975, ¶ 140).

³⁹⁵ *Aéroports de Paris*, *supra* note 403; JOANNA GOYDER & ALBERTINA ALBORS-LLORENS, GOYDER'S EC COMPETITION LAW 326 (5th ed., 2009).

³⁹⁶ S. COMM. ON ANTITRUST, *supra* note 15, at 15.

³⁹⁷ Google Shopping, *supra* note 15, at ¶ 184.

³⁹⁸ *Id.* at ¶ 168.

³⁹⁹ *Id.* at ¶ 171; SUBCOMM. ON ANTITRUST, *supra* note 15, at 188.

preferential treatment.⁴⁰⁰ Gatekeepers must advance fair and transparent criteria for displaying, rating, linking, voice results, and all similar measures. The underlying motive is to prevent gatekeepers from imposing unfair prices and conditions on dependent business partners, as these can discriminate by imposing unjustified differentiation or a disproportionate disadvantage.⁴⁰¹ Similarly, and concurrently with unfair methods of competition,⁴⁰² the U.S. legislative bill on platform monopolies includes the actual or potential exclusion of rivals or a disadvantage to the latter.⁴⁰³

Fairness Benchmarks for Excessive Algorithmic Pricing

Historically, several evolutionary theories have attempted to curb excessive pricing. Briefly, based on the moral and empirical valuation of price, the theory of value⁴⁰⁴ sought to prevent exploitation. The “just” or “fair” price was the customary price of fair dealing.⁴⁰⁵ The market price was the natural price paid for labor to reward effort.⁴⁰⁶ This labor theory of value later became a theory of production. Profit was a reward for sacrifice. From the 1870s onwards, the cost of production became a theory of supply and demand.⁴⁰⁷ For the marginalist theory of utility, wages were the effect of product value.⁴⁰⁸ An unjust market price was, therefore, one restricted by monopoly.⁴⁰⁹

In the name of fairness, one can compare the prices charged for the same or similar services by alternative app stores and in different geographic regions.⁴¹⁰ Commentators⁴¹¹ have expressed skepticism about fairness being an objective benchmark, capable of dealing with an exploitative abuse of excessive pricing. In contrast, others⁴¹² have endorsed the fairness benchmark as an objective way to assess pricing by comparing sales prices to production costs.

⁴⁰⁰ PROPOSAL for DMA, *supra* note 6, at para. 49; DMA, *supra* note 1, at para. 52.

⁴⁰¹ PROPOSAL for DMA, *supra* note 6, at para. 57; DMA, *supra* note 1, at para. 62.

⁴⁰² 15 U.S.C. § 45.

⁴⁰³ Ending Platform Monopolies Act, H.R. 3825, 117th Cong. (2021).

⁴⁰⁴ SKIDELSKY, *supra* note 33, at 163.

⁴⁰⁵ *Id.* For the requirement of fair and open dealing, *see e.g.*, *Director General of Fair Trading v. First National Bank PLC* (2001) UKHL 52, at ¶ 17.

⁴⁰⁶ SKIDELSKY, *supra* note 33, at 164 (noting the diamond-water paradox: water is vital for life but so cheap, while diamonds are useless but so expensive because of the cost of getting diamonds from the mine).

⁴⁰⁷ *Id.* at 165; ALFRED MARSHALL, *PRINCIPLES OF ECONOMICS* 416 (2013).

⁴⁰⁸ *Id.* SKIDELSKY, at 166.

⁴⁰⁹ *Id.*

⁴¹⁰ PROPOSAL for DMA, *supra* note 6, at para. 57; DMA, *supra* note 1, at para. 62.

⁴¹¹ O’Donoghue & Padilla, *supra* note 223, at 298.

⁴¹² Eilmansberger, *supra* note 343, at § 2-15-199.

Several scholars⁴¹³ have warned that algorithmic pricing is an effective way to inflict harm on consumers, as it leads to much higher or even excessive prices. Other scholars⁴¹⁴ have examined 315 articles on algorithmic pricing, involving dynamic and personalized pricing. Algorithmic pricing can automatically generate dynamic or personalized prices in real-time, matching consumer behavioral data to rival prices to extract maximum corporate rents.⁴¹⁵ One can also investigate the potential for algorithmic pricing to become an effective but unethical strategy,⁴¹⁶ designed to charge a range of different prices,⁴¹⁷ based on consumer willingness to pay a certain reservation price. Google, Microsoft, and Amazon already offer algorithmic pricing solutions.⁴¹⁸ For example, Amazon's algorithms favor merchants with the strongest returns from sales.⁴¹⁹

In *Apple Inc.*, the CAT endorsed the “tripartite structure” of *United Brands* and *Flynn's*⁴²⁰ legal test for identifying excessively unfair prices by looking at unfairness, economic value, and cost methodology. In contrast to “normal and sufficiently effective” competition,⁴²¹ an unfair price is excessive when there is no reasonable relation between the hypothetical price and its economic value.⁴²² The economic value must be objectively assessed by comparison with rival prices to determine the difference between the actual cost and the excessive price. For example, the excessive price will be assessed against a benchmark that is higher than the actual cost drawn upon the sales return and the capital employed, compared to rival products.⁴²³ Commentators have ascertained that, unless it adopts a reliable benchmark for calculating a competitive profit margin,⁴²⁴ the test of *United Brands* cannot bring about much

⁴¹³ Emilio Calvano, Giacomo Calzolari, Vincenzo Denicolo & Sergio Pastorello, *Algorithmic Pricing: What Implications for Competition Policy?*, 55 REV. INDUS. ORG. 155, 167–68 (2019) (discussing algorithmic efficiency but not favoring a ban on algorithmic pricing).

⁴¹⁴ Seele, *supra* note 379, at 697–719.

⁴¹⁵ *Id.* at 699, 702; see also SURBLYTĖ-NAMAVIČIENĖ, *supra* note 277, at 222 (discussing how strengthening a dominant position through algorithmic manipulation cannot be evidence of meritocratic competition).

⁴¹⁶ Seele, *supra* note 379, at 699.

⁴¹⁷ The essence of first-degree classical discrimination lies in charging a “different price” for all of the different units of a basic good or raw material. See A.C. PIGOU, *THE ECONOMICS OF WELFARE* 279 (2013).

⁴¹⁸ Seele, *supra* note 379, at 701.

⁴¹⁹ S. COMM. ON ANTITRUST, *supra* note 15, at 244.

⁴²⁰ *Kent v. Apple Inc.*, *supra* note 282, at ¶ 49, 69. (citing Case C-27/76, *United Brands & United Brands Continentaal v. Comm'n on E.U. Cmty.*, 1978, E.C.R. 207, 250).

⁴²¹ *Id.* at ¶ 70, 72.

⁴²² For earlier cases of excessive pricing, see RICHARD WHISH & DAVID BAILEY, *COMPETITION LAW* 762, 766 (9th ed. 2018).

⁴²³ *Kent v. Apple Inc.*, *supra* note 282, at ¶ 50.

⁴²⁴ O'Donoghue & Padilla, *supra* note 223, at 934.

needed clarity. To identify an unfair price, this test also needs clear guidance on the margin level and relevant costs⁴²⁵ that can lead to an excessive price.

However, the competition authorities preserve their own margin of discretion when determining the above cost methodology.⁴²⁶ The Courts also choose from various methods.⁴²⁷ According to Justice Green, economic value is part of the overall description of abuse but is not a legal test.⁴²⁸ This means that, although economics must be factored in, the competition authority enjoys some discretion. In *Apple Inc.*,⁴²⁹ the CAT held the net revenues of \$15 billion from the Apple App Store, excluding the \$100 million cost of running the App Store, against Apple's higher commission rates.

FRAND: Fair, Reasonable, and Non-Discriminatory Terms of Access to Data

A conservative approach to essential facilities and digital infrastructures offers access to rivals on equal terms, especially when prior permission has already been granted. This approach relies on principles of non-discrimination and equality of opportunity, i.e., fairness. In a case of denial of access, or where there is a dispute over price, the courts must decide on "reasonable" terms. However, courts cannot set the "right" price, assist with the technicalities of sophisticated product design,⁴³⁰ or even ponder the "right" amount of innovation.

Fair, reasonable, and non-discriminatory terms are known as FRAND. Under the DMA, gatekeepers should offer FRAND terms of access to anonymized searches, social networks, and app store-mobile data, including rankings, queries, clicks, and search-related view data.⁴³¹ Thus, universal search engines, such as Google and Bing should anonymize personal data, but maintain quality. Notably, *Google Shopping* examined equal access⁴³² for rival comparison-shopping services. To maintain transparency, FRAND terms must be published by app stores, search engines, and social networks.⁴³³

⁴²⁵ FAULL & NIKPAY, *supra* note 292, at § 4.832.

⁴²⁶ *Kent v. Apple Inc.*, *supra* note 282, at ¶ 72 (pinpointing how earlier cases did not determine that methodology).

⁴²⁷ *Id.* at ¶ 53. Note however, there is no single methodology. See *Attheraces Ltd. & Anor v. British Horseracing Board Ltd. & Anor* (ATR) [2007] EWCA (Civ) 38, [213] (Eng.).

⁴²⁸ *Kent v. Apple Inc.*, *supra* note 282, at ¶ 51, 70.

⁴²⁹ *Id.* at ¶ 62, 63. This cost determination was assessed against Apple's contribution to innovation, while the cost methodology disregarded the extent of innovation. See *id.* at ¶ 67, 68 (2).

⁴³⁰ Hovenkamp, *supra* note 214, at 1534–36.

⁴³¹ DMA, *supra* note 1, at para. 61 and art. 7 (11) and (12). See, also OECD TOOLKIT, *supra* note 260, at 10, para. 22 (on access to data on a FRAND basis).

⁴³² *Google Shopping*, *supra* note 15, at ¶ 222.

⁴³³ DMA, *supra* note 1, at para. 62.

Similarly, a U.S. proposal⁴³⁴ bans any material restriction, impediment, or unreasonable delay of access to or interoperability with rival platforms, operating systems, and hardware or software features. The same applies to any material restriction or impediment that prevents a business from accessing experience data through contractual or technical restrictions that prevent portability.⁴³⁵

Under the DMA, gatekeepers are obliged to offer consumers “equal” access to an operating system and hardware and software features.⁴³⁶ Additionally, businesses must be offered fair and non-discriminatory access to software app stores, search engines, and social networks.⁴³⁷

By contrast, it may be problematic to provide advertisers, publishers, and authorized third parties with free and continuous access to performance-measurement tools and inventory data⁴³⁸ because these intermediaries will also have access to personal data.⁴³⁹ This includes non-aggregated data used for verification purposes.⁴⁴⁰ Equally problematic is effective and immediate access to personal data⁴⁴¹ generated on the core platform. However, the DMA authorizes free, continuous, and real-time access to data⁴⁴² for rivals and third parties and, upon request, access to experience data. Although explicit consent must be sought, granting rivals and third parties access to experience data supersedes the mission of the DMA to tackle such exploitative use of consumer data. Indeed, by granting data access to rivals, the DMA strikes a fair balance by widening access to aggregated and non-aggregated data, which benefits businesses by preventing the exclusionary abuse of data.⁴⁴³ However, such access to data exploits consumer privacy. Even with anonymized data, there lies a risk of behavioral discrimination.⁴⁴⁴ Inevitably, access to data becomes indispensable,⁴⁴⁵ especially where it is impossible or unreasonably difficult for rivals to “collect” or “create” data on their own.

⁴³⁴ S. 2992 § 3 (4).

⁴³⁵ *Id.* at § 3 (7).

⁴³⁶ See DMA, *supra* note 1, at para. 57.

⁴³⁷ Proposal for DMA, *supra* note 6, at para. 52 and art. 6 (k) (on publishing access conditions).

⁴³⁸ DMA, *supra* note 1, at para. 58 and art. 6 (8).

⁴³⁹ Proposal for DMA, *supra* note 6, at paras. 53, 55.

⁴⁴⁰ DMA, *supra* note 1, at art. 6 (8).

⁴⁴¹ Proposal for DMA, *supra* note 6, at art. 6 (i) (“effective, high-quality, continuous and real-time” access to data).

⁴⁴² DMA, *supra* note 1, at para. 60 and art. 6 (10).

⁴⁴³ OECD HANDBOOK, *supra* note 7, at 52 (noting the danger arising from excluding rivals from access to personal data in exchange for zero-priced services).

⁴⁴⁴ Chirita, *supra* note 63, at 180; Chirita, *supra* note 186, at 29; ARIEL EZRACHI & MAURICE E. STUCKE, VIRTUAL COMPETITION: THE PROMISE AND PERILS OF THE ALGORITHM-DRIVEN ECONOMY 84 (2016).

⁴⁴⁵ SURBLYTĖ-NAMAVIČIENĖ, *supra* note 277, at 216.

As will be explained further, the orthodox position adopted by the Courts has been minimizing the undeserved disclosure of data and associated free riding. Nonetheless, by means of delegated acts, the EC retains the discretion to extend certain obligations, depending on the type of data sought.⁴⁴⁶

A Refusal of Access to Data

Several conditions must be met before access to data can be refused.⁴⁴⁷ The most important factors are the likelihood of eliminating competition and the indispensability of access to an essential facility or infrastructure for a service for which there are no real substitutes. By granting access to this information, an exclusive intellectual or property right, which rewards innovation or investment, can be curtailed.⁴⁴⁸

In *Google Shopping*, universal search was seen as analogous to an essential facility,⁴⁴⁹ although there were no substitutes that could be economically viable due to irreplaceable lost traffic.⁴⁵⁰ However, the Court dismissed an exclusionary refusal to supply.⁴⁵¹ For the latter condition, there must first be an express request, which is subsequently denied.⁴⁵² Otherwise, most exclusionary practices can be construed as implicit refusals to supply by making access more difficult.⁴⁵³ However, on several occasions, the Courts did not require the indispensability condition.⁴⁵⁴ The Court clearly dismissed a unilateral refusal to supply in *Google Shopping*.⁴⁵⁵ This position reflects a pragmatic approach to a possible remedy that could become too costly⁴⁵⁶ – in particular, the imposition of a duty to deal with rivals. Previously, leading commentators⁴⁵⁷ had distinguished between a refusal to supply a new customer and a

⁴⁴⁶ DMA, *supra* note 1, at art. 12.

⁴⁴⁷ *Google Shopping*, *supra* note 15, at ¶¶ 213, 215 (noting that (1) the refusal must be likely to eliminate all competition in the market on the part of the person requesting the service, (2) the refusal must be incapable of being objectively justified, and (3) that the service in itself be indispensable to carrying on that person's business, inasmuch as there was no actual or potential substitute for it).

⁴⁴⁸ *Google Shopping*, *supra* note 15, at ¶ 215.

⁴⁴⁹ *Id.* at ¶ 224–25.

⁴⁵⁰ *Id.* at ¶ 445, 504.

⁴⁵¹ *See id.*

⁴⁵² *Id.* at ¶ 229, 232.

⁴⁵³ *Id.* at ¶ 234.

⁴⁵⁴ *See* Case T-612/17, *Google LLC & Alphabet, Inc., v. EU. Comm'n*, 2021 ECLI 763, ¶¶ 235, 239 (noting that the indispensability condition was not required in cases involving a margin squeeze, tied sales, discrimination between competitors, or self-favoring).

⁴⁵⁵ *Id.* at ¶ 238; *cf.* Hovenkamp, *supra* note 214, at 1545 (noting a “secondary” refusal to grant access to rivals).

⁴⁵⁶ *See* PABLO IBÁÑEZ COLOMO, *THE SHAPING OF EU COMPETITION LAW* 109 (2018).

⁴⁵⁷ VIVIEN ROSE & DAVID BAILEY, *BELLAMY & CHILD'S EUROPEAN UNION OF COMPETITION* 833, § 10.132 (7th ed. 2013).

termination of supply to an existing customer. In contrast, *Commercial Solvents* concerned an abrupt termination of supply to a rival,⁴⁵⁸ which was likely to eliminate all competition.

Behavioral Versus Contractual Tying

Historic cases such as *Microsoft* challenged the choice of product design.⁴⁵⁹ Microsoft offered enhanced functionality entirely free of charge.⁴⁶⁰ However, Microsoft pre-installed its Internet Explorer, which restricted the free choice of consumers. Such tying or bundling facilitates profitable or perfect price discrimination.⁴⁶¹

In line with earlier tying cases, the DMA safeguards consumer choice when switching services, software apps, and subscriptions. There should be no technical or artificial barriers to switching.⁴⁶² Switching should not be prevented, made impossible or unduly difficult.⁴⁶³ Therefore, multi-homing to alternative software solutions can prevent “platform dependence.”⁴⁶⁴

Gatekeepers should maintain quality, an unbiased freedom of choice in relation to product design, function, and use, and the integrity of individual user decision-making.⁴⁶⁵ First, pre-installation has been problematic.⁴⁶⁶ Other behavioral biases⁴⁶⁷ have captured self-preferencing through pre-installed own or third-party software apps or services, such as operating systems, virtual assistants, and browsers.⁴⁶⁸ Second, the removal or change of default settings on an operating system, virtual assistant, or browser should be possible or made easier.⁴⁶⁹ This includes a choice screen for first use to

⁴⁵⁸ *Id.* at § 10.133.

⁴⁵⁹ PAGE & LOPATKA, *supra* note 31, at 22, 57.

⁴⁶⁰ Case T-2011/04 *Microsoft* EU:T:2007:289; EC, COMP/C-3/37792 *Microsoft* [2004].

⁴⁶¹ MASSIMO MOTTA, COMPETITION POLICY: THEORY AND PRACTICE 462 (2004); JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 146 (1998); Nicholas Economides, *Tying, bundling, and loyalty/requirement rebates*, in RESEARCH HANDBOOK ON THE ECONOMICS OF ANTITRUST LAW 125 (Einer Elhauge ed., 2012) (explaining that in the absence of tying, a monopolist cannot implement perfect price discrimination); ROGER VAN DEN BERGH, PETER CAMESASCA, & ANDREA GIANNACCARI, COMPARATIVE COMPETITION LAW AND ECONOMICS 322 (2017).

⁴⁶² DMA, *supra* note 1, at para. 53 and art. 6 (6).

⁴⁶³ *Id.* at art. 13 (6).

⁴⁶⁴ *Id.* at para. 40.

⁴⁶⁵ *Id.* at art. 13 (6).

⁴⁶⁶ Proposal for DMA, *supra* note 6, at para. 41; DMA, *supra* note 1, para. 49.

⁴⁶⁷ OECD HANDBOOK, *supra* note 7, at 26; Criado & Such, *supra* note 68, at 85 (arguing that although bias represents a standard deviation, it might not necessarily lead to disadvantageous treatment).

⁴⁶⁸ Proposal for DMA, *supra* note 6, at para. 46; DMA, *supra* note 1, at para. 49.

⁴⁶⁹ DMA, *supra* note 1, at art. 6 (3).

allow users to choose from a list of available providers. In *Google Android*,⁴⁷⁰ users could not uninstall Search and Chrome. On a lasting basis, pre-installation has reinforced the status-quo behavioral bias, to the detriment of rivals. Apple, too, has over two dozen apps pre-installed on iPhones.⁴⁷¹ Its virtual assistant, Siri, also comes pre-installed as a default.⁴⁷² Due to a technological tie to Apple hardware,⁴⁷³ rival assistants cannot be installed. An estimated 300 million users have installed Amazon Alexa, who has been likened to a “natural oligopoly.”⁴⁷⁴ However, scholars⁴⁷⁵ have rejected the existence of “natural” monopolies for technology giants such as Google and Amazon.⁴⁷⁶ Otherwise, they would not pay the likes of Apple to pre-install universal search as a default.

Under the DMA, gatekeepers should not only allow the installation of rival software apps or app stores, but also enable their interoperability and eventual default.⁴⁷⁷ A classic example of status-quo bias is the pre-installation of 40 Apple apps as a default.⁴⁷⁸ Due to Apple’s gatekeeper position,⁴⁷⁹ app developers cannot reach users on Apple iOS. Since the latter has been exclusively pre-installed on iPhones, no other operating system can be installed.⁴⁸⁰ Such monopolistic control over proprietary interfaces and designs⁴⁸¹ excludes rivals from an entire digital distribution system of innovative apps. Apple also makes the distribution of rival apps⁴⁸² via iOS conditional on the acceptance of App Store fees, including access to personal-experience data. Until 2020, Apple’s Safari was also pre-installed as a default browser.⁴⁸³ Other technical restrictions on software-app distribution, alternative subscriptions, or even

⁴⁷⁰ *Google Android*, *supra* note 10, at ¶ 775, 779, 781, 861, 869.

⁴⁷¹ Geradin & Katsifis, *supra* note 278, at 579.

⁴⁷² INVESTIGATION, *supra* note 15, at 374; Ezrachi & Stucke, *supra* note 234, at 234 (raising the prospect of product integration by means of tying).

⁴⁷³ INVESTIGATION, *supra* note 15, at 375.

⁴⁷⁴ BESSEN, *supra* note 29, at 87, 95 (noting that Amazon, Google, Apple, and Baidu spend large amounts on research and development of voice recognition).

⁴⁷⁵ Hovenkamp, *supra* note 216, at 1980; *cf.* DUCCI, *supra* note 214, at 63 (proposing natural monopoly regulation for the vertical integration of general and specialized search).

⁴⁷⁶ DUCCI, *supra* note 214, at 91 (recognizing Amazon’s leveraging for anti-competitive discrimination, demotion of rivals, and abuse of confidential data).

⁴⁷⁷ Proposal for DMA, *supra* note 6, art. 6 (c); DMA, *supra* note 1, at para. 50, art. 6 (4).

⁴⁷⁸ INVESTIGATION, *supra* note 15, at 352-53.

⁴⁷⁹ For an insightful contribution on a pending case, see Geradin & Katsifis, *supra* note 278, at 514.

⁴⁸⁰ *Kent v Apple Inc.*, *supra* note 282, at ¶ 9.

⁴⁸¹ See PETIT, *supra* note 124, at 102 (discussing the disruptive impact on interoperability).

⁴⁸² Geradin & Katsifis, *supra* note 278, at 569.

⁴⁸³ INVESTIGATION, *supra* note 15, at 355.

the open Internet may also inhibit the individual free choice of consumers.⁴⁸⁴

Potential contractual tying may emerge if loyal customers are locked into⁴⁸⁵ Amazon Prime, which glues customers to spend twice as much⁴⁸⁶ as non-members. *Google Android's* tying of Search and Chrome to its Play Store⁴⁸⁷ is conditional on anti-fragmentation exclusivity agreements. Even where a distant link⁴⁸⁸ exists between these two supplementary offerings and Play Store, each could have been offered separately. Furthermore, anti-fragmentation agreements are not customary for licensing.⁴⁸⁹ Although Play Store allows customers to download and install complementary apps, customers may wish to purchase them from an alternative source.⁴⁹⁰ Tying offered Google a significant competitive advantage,⁴⁹¹ enabling the conglomerate to strengthen its dominant position, chill innovation, and harm consumers. Specifically, Google reduced the incentives to invest further in algorithmic innovation⁴⁹² and design experience to benefit consumers.

An earlier draft recognized that “identification” services such as browsers and payment services, or technical services for app purchasers, could be imposed on dependent businesses.⁴⁹³ The final version of the DMA notes however that the latter should freely choose an alternative service.⁴⁹⁴ Businesses should be free to unsubscribe or to close their accounts.⁴⁹⁵ Initially, “self-favoring” included a default bundle of own or third-party services,⁴⁹⁶ such as operating systems, software apps, virtual assistants, and browsers. This obliged gatekeepers to prompt users to change their pre-installed default options.⁴⁹⁷ Finally, the U.S. legislative proposal also bans the material restriction

⁴⁸⁴ Proposal for DMA, *supra* note 6, at para. 47 and art. 6 (e); see also DMA, *supra* note 1, at para. 54 and art. 6 (6) (discussing the choice of Internet).

⁴⁸⁵ INVESTIGATION, *supra* note 15, at 297; BAKER, *supra* note 314, at 136.

⁴⁸⁶ GASTER, *supra* note 302, at 42, 52.

⁴⁸⁷ Google Android, *supra* note 10, at ¶ 737, 752–53.

⁴⁸⁸ *Id.* at ¶ 1011, 1013.

⁴⁸⁹ *Id.* at ¶ 1020. For example, Apple, BlackBerry, and Microsoft have adopted a proprietary business model. *Id.* at para. 1024.

⁴⁹⁰ *Id.* at ¶ 744, 757. See also *id.* at ¶ 834 (stating Bing was not pre-installed on any Android device between 2011 and 2016); *id.* at ¶ 913, 915 (stating significant number of users did not download rival browsers).

⁴⁹¹ *Id.* at ¶ 773, 947, 969. See also *id.* at ¶ 979 (discussing how Google may have prevented the development of more innovative browsers); *id.* at ¶ 971, 1142, (noting that Google’s conduct has led to consumer harm).

⁴⁹² *Id.* at ¶ 862, 1315.

⁴⁹³ Proposal for DMA, *supra* note 6, at para. 43, 44, art. 6 (6).

⁴⁹⁴ DMA, *supra* note 1, at para. 43 (explaining subscription cancellation should be easier).

⁴⁹⁵ DMA, *supra* note 1, at para. 63.

⁴⁹⁶ Draft Proposal for DMA, *supra* note 118, at para. 49.

⁴⁹⁷ *Id.* at para. 50 (stating for security reasons, the principle of proportionality should

of or impediments to the removal of pre-installed software applications or changes to the default settings.⁴⁹⁸

Exclusivity

Anticompetitive exclusivity arrangements that tie services as a default are closely related to tying. In *Google Android*,⁴⁹⁹ a “carrot-and-stick” strategy of exclusive “anti-fragmentation” agreements⁵⁰⁰ was used with mobile manufacturers such as Apple. This strengthened Google’s dominance by making its Search the default mobile option. In return, manufacturers were obliged, for a five-year period (subject to further extensions)⁵⁰¹ to exclude third-party apps. Manufacturers also pre-installed a mandatory suite of 12 Google apps in 2009 and another 30 apps in 2014.⁵⁰² Consumers could not get Play Store without Search. Furthermore, Android was conditional on licensing agreements⁵⁰³ and subject to an entire bundle of apps also being pre-installed. Google became an unavoidable trading partner and enjoyed strong and stable market leadership.⁵⁰⁴ However, the anti-fragmentation agreements above are unnecessary for interoperability.⁵⁰⁵ Instead of exclusivity, Google should have offered monetary incentives, such as revenue shares and lump-sum payments.⁵⁰⁶

Round in Circles – From Conflicts of Interest to a Misuse of Personal Data for Profitable Analytics

The DMA recognizes the dual role of gatekeepers⁵⁰⁷ offering core services, such as marketplaces, software, mobile-app stores, and cloud-computing services, where there is a conflict of interest. Therefore, gatekeepers should not take advantage of the experience data generated on their platforms in order to advance their own products for advertising.⁵⁰⁸ Previously, Facebook used

be observed).

⁴⁹⁸ S. 2992 § 3 (a) (8).

⁴⁹⁹ *Google Android*, *supra* note 10, at ¶ 118–19, 739.

⁵⁰⁰ *See id.* at ¶ 1019, 1030, 1036 (discussing the lack of a nexus between anti-fragmentation and licensing agreements, in addition to how the former failed to promote interoperability, hindering the development of Android forks).

⁵⁰¹ *Id.* at ¶ 190.

⁵⁰² *Id.* at ¶ 117, 180, 182; INVESTIGATION, *supra* note 15, at 214.

⁵⁰³ *Google Android*, *supra* note 10, at ¶ 765.

⁵⁰⁴ *Id.* at ¶ 434, 445–46.

⁵⁰⁵ *Id.* at ¶ 1157.

⁵⁰⁶ *Id.* at ¶ 1329.

⁵⁰⁷ *See* DMA, *supra* note 1, at para. 46; INVESTIGATION, *supra* note 15, at 40 (discussing how dominant platforms have constantly exploited their dual role to acquire key technology).

⁵⁰⁸ DMA, *supra* note 1, at para. 47.

its artificial data advantage for “superior market intelligence”⁵⁰⁹ to identify and acquire potential rivals. Google acquired Looker, a business-intelligence and data-analytics start-up.⁵¹⁰

The misuse of data was the subject of a UK class action, focusing on Facebook’s monetization of access to behavioral data for targeted advertising.⁵¹¹ The data were gleaned from customer browsing and private messaging.⁵¹² This profitable strategy was exploited in *Google Android*⁵¹³ and *Google Search Shopping*,⁵¹⁴ based on free-of-charge search data.⁵¹⁵ Google then used a substantial amount of behavioral data for advertising.⁵¹⁶ Apple also misused personal-experience data from its various apps and App Store.⁵¹⁷ The latter collects confidential data⁵¹⁸ about popular apps for integration into Apple iOS. Although Apple owns the App Store, it also participates as a competitor in the App Store, giving rise to a conflict of interest. Furthermore, Apple competes aggressively against smaller app developers. The App Store engages in antitrust “Sherlocking” on Apple iOS. Sherlocking offers an entirely free-of-charge replica app.⁵¹⁹ Apple has also exploitatively misused confidential data about rival app developers.⁵²⁰ Having acquired⁵²¹ access to confidential sales data, the App Store is uniquely positioned to know which popular apps to Sherlock.

Similarly, Amazon has misused its access to aggregated, and thus confidential, seller data for its own competitive advantage, e.g., to promote Amazon brands.⁵²² Enjoying privileged access to confidential seller data, Amazon also maintains control over its Buy Box.⁵²³

⁵⁰⁹ INVESTIGATION, *supra* note 15, at 14.

⁵¹⁰ *Id.* at 387.

⁵¹¹ *Competition Notice*, *supra* note 276.

⁵¹² *Id.*

⁵¹³ *Google Android*, *supra* note 10, at ¶ 326, 328 and 769. However, Google failed to demonstrate how tying was necessary to monetize its investment in Android. *Id.* at ¶ 995.

⁵¹⁴ Case AT.39740, *Google Search (Shopping)*, Eur. Comm’n Comp. Dec. ¶ 159 (Jun. 27, 2017).

⁵¹⁵ VENKATESAN & LECINSKI, *supra* note 114, at 102 (noting that Google Analytics automatically records data about webpage visits including doubleclick data).

⁵¹⁶ *Google Android*, *supra* note 10, at ¶ 458.

⁵¹⁷ GERADIN & KATSIFIS, *supra* note 278, at 560, 569.

⁵¹⁸ Stucke, *supra* note 29, at 37 (discussing the collection of “commercially sensitive data” about rivals).

⁵¹⁹ INVESTIGATION, *supra* note 15, at 362.

⁵²⁰ *Id.* at 116.

⁵²¹ See BRETT CHRISTOPHERS, *THE GREAT LEVELER: CAPITALISM AND COMPETITION IN THE COURT OF LAW 271* (2016) (accusing Apple of structural consolidation due to having acquired transnational monopoly power).

⁵²² INVESTIGATION, *supra* note 15, at 277, 280.

⁵²³ *Id.* at 282.

Voice assistants, too, risk the potential misuse of a “significant” amount of personal data⁵²⁴ on user preferences. Due to a conflict of interest, Amazon can access Alexa⁵²⁵ to extract valuable consumer data that reveal the usage of third-party apps. Similarly, Apple has adopted a “walled garden” approach⁵²⁶ to voice assistants by limiting their interoperability on mobile devices, including restrictions on how Siri works on non-Apple devices.

Under the DMA, a cloud-computing service can, unfortunately, still use aggregated experience data to offer analytics services.⁵²⁷ However, marketplaces and software apps should not misuse aggregated, or even anonymized, personal data, which are not publicly available.⁵²⁸ Earlier drafts were better at including a similar misuse of data for analytics purposes, namely targeted advertising.⁵²⁹ Comparatively, a U.S. proposal⁵³⁰ specifically included the actual or potential use of a dominant platform for advertising or sales and the use of experience data, which were not publicly available, to offer services that would compete with rivals.⁵³¹ This regulatory approach better protects consumer privacy.⁵³²

THE REGULATORY DEFENSES AND EXCEPTIONAL CIRCUMSTANCES

Among the traditional defenses used to justify monopolistic abuse are “objective” and “legitimate”⁵³³ commercial or technical justifications. In *Google Shopping*,⁵³⁴ the General Court recognized as one such defense the protection against unfair competition or commercial consideration of customer negotiations. Technical considerations involve maintaining or improving performance by means of economic efficiencies. However, the Court dismissed the exclusively private corporate interests of Google.⁵³⁵ Although self-promotion brought about some service improvements, Google failed to demonstrate how demotion gave rise to efficiency gains for consumers, for example by

⁵²⁴ *Id.* at 307.

⁵²⁵ *Id.* at 314.

⁵²⁶ *Id.* at 374.

⁵²⁷ DMA, *supra* note 1, at para. 48.

⁵²⁸ *Id.* at para. 46.

⁵²⁹ Stucke, *supra* note 29, at 210 (arguing in favor of a ban on the use of personal data for behavioral advertising then subsequently). *But see id.* at 212 (coming to the surprising conclusion that it would be inadequate to ban behavioral advertising).

⁵³⁰ S. 2992 § 3 (9) (deleting previous provisions that were later replaced by the “American Innovation and Choice Online Act”).

⁵³¹ *Id.* § 2 (a).

⁵³² Stucke, *supra* note 29, at 133 (contrasting U.S. and EU approaches to data hoarding versus data minimization).

⁵³³ *See* IOANNIS LIANOS, PAOLO SICILIANI, & VALENTINE KORAH, COMPETITION LAW: TEXT, CASES AND MATERIALS 950 (2019).

⁵³⁴ *Google Shopping*, *supra* note 15, at ¶ 551–53.

⁵³⁵ *Id.* at ¶ 553 (citing Case C-307/18, *Generics (UK) and Others*, EU:C:2020:52, ¶ 166).

improving the user experience.⁵³⁶ Defenses that fall outside the scope of competition law (e.g., product quality alone,⁵³⁷ public health, or product liability) are unlikely to be successful.

In *Meta*,⁵³⁸ even the need for contractual performance had to be proportionate, ensuring that there were no realistic, less intrusive alternatives. Other legitimate interests, such as Facebook's personalized content and network security, had to balance the legitimate expectations of Facebook users against a "purely economic" or subjective interest in personalization.⁵³⁹

The DMA has dismissed more traditional efficiency defenses, except in exceptional circumstances beyond the gatekeepers' control that jeopardized their economic viability.⁵⁴⁰ Other exceptional grounds for an acceptable defense are in the public interest; they include public morality, health, and security. Further special exceptions for anticompetitive tying apply to pre-installed apps required for the functioning of the operating system or device, due to technical issues, or proportionate to maintaining the integrity of the hardware or operating system. For example, unauthorized access or security-control measures⁵⁴¹ may rescue Microsoft or Apple. However, given PayPal's readiness⁵⁴² to meet security standards, Apple's security defense remains weak.

On the whole, the latest regulatory dismissal of hypothetical technical measures of protection was long overdue, as not all technical grounds are absolutely necessary.⁵⁴³

Due to exceptional circumstances,⁵⁴⁴ a decision may be suspended—for example, where an unforeseen external shock endangers the economic viability of gatekeepers, especially for small- to medium-sized enterprises and consumers.⁵⁴⁵ The exception above is intended to ensure a fair balance of interests. Other exceptional circumstances are limited on grounds of public health or security, as interpreted by the CJEU.⁵⁴⁶ A temporary suspension may be sought; any exemption on grounds of public health or security⁵⁴⁷ may be suspended in urgent cases but remains subject to a yearly review.

By contrast, the U.S. legislative proposal has recognized a national security

⁵³⁶ *Id.* at ¶ 560, 567, 572.

⁵³⁷ *Id.* at ¶ 612.

⁵³⁸ *Meta*, *supra* note 46, at ¶ 47, 54.

⁵³⁹ *Id.* at ¶ 64.

⁵⁴⁰ DMA, *supra* note 1, at para. 23.

⁵⁴¹ DMA, *supra* note 1, at paras. 49, 50 and art 6 (3) (noting where removal is practically impossible).

⁵⁴² GERADIN & KATSIFIS, *supra* note 278, at 550–51.

⁵⁴³ Chirita, *supra* note 63, at 173–75.

⁵⁴⁴ DMA, *supra* note 1, at art. 9.

⁵⁴⁵ *Id.* at para. 66 and art. 9 (4).

⁵⁴⁶ *Id.* at para. 67.

⁵⁴⁷ *Id.* at art. 10.

risk when platform advertising comes under the control of a “foreign adversary”⁵⁴⁸ for surveillance purposes. An additional defense for tying involves cases in which pre-installation is necessary for platform security or functioning or to prevent data “from being transferred to the government of a foreign adversary.”⁵⁴⁹ As a matter of extra-territorial application, the privacy shield is something that, comparatively, the Union data-protection framework ensures.

The U.S. proposal also includes further affirmative defenses: protecting safety, privacy, non-public data, and platform security, and maintaining or substantially enhancing the core functionality of the platform.⁵⁵⁰ In such instances, it is necessary to first establish that competition has been harmed, that the conduct was non-pretextual, and that the conduct was reasonably necessary to protect any of the defenses above.⁵⁵¹ A temporary injunction in the public interest can be granted to allow access, including through licensing, to a platform’s intellectual property, business secrets, or any other confidential proprietary information in the name of interoperability or data sharing.⁵⁵² There is an important caveat, however, where the above injunction cannot be construed to give access, in the event of national security, intelligence, or law enforcement risks or for accessing personally identifiable experience data if these are to be transferred to “another foreign government adversary.”⁵⁵³

EFFECTIVE REMEDIES AND FINES

The DMA maintains the EC’s discretion over the choice of remedies. The same goes for the EC’s power to reopen proceedings if remedies, including commitments, turn out to be ineffective.⁵⁵⁴ Remedies must be proportionate to maintain or restore contestability and fairness.⁵⁵⁵ The most drastic remedy is structural.⁵⁵⁶ Structural remedies can be imposed whenever behavioral remedies fail to address unfairness and where restructuring would also be proportionate.⁵⁵⁷

Structural remedies have gained traction with the OECD’s proposed divestiture of research and development to nurture future innovation.⁵⁵⁸ However,

⁵⁴⁸ S. 2992 § 2 (a) (8).

⁵⁴⁹ *Id.* § 3 (a) (8).

⁵⁵⁰ *Id.* § 3 (b) (1).

⁵⁵¹ *Id.*

⁵⁵² *Id.* § 3 (c) (5) (C) (ii).

⁵⁵³ *Id.* § 3 (a) (8).

⁵⁵⁴ DMA, *supra* note 1, at paras. 75, 76 and art. 25.

⁵⁵⁵ *Id.* art. 18 (2).

⁵⁵⁶ *Id.*

⁵⁵⁷ *Id.*

⁵⁵⁸ OECD HANDBOOK, *supra* note 7, at 47.

while behavioral remedies can work to restrict data combination for conglomerate acquisitions,⁵⁵⁹ structural remedies have not been positively evaluated.⁵⁶⁰ Even the most fervent critics⁵⁶¹ fear that breakups could also lead to multiple forms of data surveillance. The culprit is, again, a divestiture of consumer datasets, due to data being essential for rivals' access to data. In other words, the choice of a remedy remains imprisoned within a well-known dilemma, namely the choice between addressing the exclusionary harm to rivals and the exploitation of consumers. Unfortunately, it looks as if it cannot fix both at the same time without encountering the difficulties associated with more drastic remedies.

Additional remedies can be imposed for “systematic” non-compliance with one or more obligations if there have been at least three non-compliance decisions within eight years with unsuccessful remedies (e.g., the gatekeeper in question has strengthened its impact on the market, consolidated its economic dependency, or entrenched its position).⁵⁶²

Some commentators distrust structural remedies,⁵⁶³ arguing that they are not fit to address the challenges raised by digital markets. One scholar⁵⁶⁴ has aptly identified the most obvious GAFAM giants, which qualify for a separation of powers; for example, Amazon's separation of retail from cloud computing, Google's Search from profitable advertising, and Facebook's social networking from messaging. Due to the rarity of structural remedies, other commentators have argued that such remedies require extensive governmental and judicial efforts.⁵⁶⁵ It will require imagination to dismantle the ownership of digital monopolies such as Facebook and Google. It will also trigger a massive change in their operating business models. For example, a divestment of social networking and universal search⁵⁶⁶ from lucrative advertising will certainly benefit excluded rivals that primarily need access to data and

⁵⁵⁹ See Anca D Chirita, *Data-driven Mergers under EU Competition Law*, in *THE FUTURE OF COMMERCIAL LAW: WAYS FORWARD FOR CHANGE AND REFORM* 175 (Orkun Akseli & John Linarelli eds., 2020) (discussing the theories of harm for conglomerate mergers).

⁵⁶⁰ OECD TOOLKIT, *supra* note 260 at 14, para. 40; Stucke, *supra* note 29, at 59 (noting the lack of consensus between breakups and regulatory approaches to digital dominance).

⁵⁶¹ ZUBOFF, *supra* note 51, at 23.

⁵⁶² DMA, *supra* note 1, at paras. 73, 75 and art. 18.

⁵⁶³ OECD HANDBOOK, *supra* note 7, at 53; Mazzucato, Entsminger, & Kattel, *supra* note 179, at 20.

⁵⁶⁴ PETIT, *supra* note 124, at 17.

⁵⁶⁵ See e.g., Eleanor M. Fox and Donald I. Baker, *Antitrust and Big Tech Breakups: Piercing the Popular Myths by Cautious Inquiry*, *CPI ANTITRUST CHRONICLE* 14 (Oct. 2021) (favoring structural remedies solely against monopolies created through the acquisitions of numerous rivals).

⁵⁶⁶ ZUBOFF, *supra* note 51, at 31.

secret⁵⁶⁷ proprietary algorithms. However, while divestment will protect consumers from exploitative advertising, the behavioral remedy of granting access to data to rivals⁵⁶⁸ will certainly not enhance consumer privacy. In fact, it will undermine it further. The same goes for regaining control of digital giants as “public utilities”⁵⁶⁹ under a strict legal obligation to share customer data.⁵⁷⁰ While access to indispensable technical infrastructure makes sense for interoperability with novel digital applications, any mandatory duty to share experience data brings us back to square one.

As a prominent commentator has argued,⁵⁷¹ a trade-off must be struck between the marginalization of rivals unable to innovate without access to data and the risk of data analytics and extraction to consumers. However, the digital exploitation of consumers has not been the sole creation of surveillance capitalism, based on the data mining of everything, including confidential e-mails;⁵⁷² it has also been maintained for fabulous corporate profits by the GAFAM trillionaires.

One particular novelty is the mandatory special notification⁵⁷³ system of the DMA for all gatekeeper mergers prior to implementation, public bidding, or the acquisition of a controlling interest in undertakings that collect data. In addition to the general merger-control notification system, this special notification system extends EC control over mergers, as well as the power to temporarily prohibit “data-driven mergers.”⁵⁷⁴ This is especially welcomed to ensure greater transparency of harmful consumer profiling. Gatekeepers should therefore abstain from “deep” profiling without a legal basis and clear duration;⁵⁷⁵ the latter cannot become a de-facto industry standard. Although, it remains clear that some pervasive profiling will still be tolerated, undertakings are encouraged to offer “superior” privacy standards.

The fines imposed on gatekeepers are the same as those for competition-

⁵⁶⁷ MacCarthy, *supra* note 388, at 65 (discussing the danger of disclosing trade-secret information and favoring fairness by design to test against algorithmic bias).

⁵⁶⁸ Caffarra, Crawford, & Ryan, *supra* note 173, at 19 (discussing how Facebook charged monopolistic rents for its low-privacy product).

⁵⁶⁹ PETIT, *supra* note 124, at 18.

⁵⁷⁰ Stucke, *supra* note 29, at 164 in favor of such a legal duty to encourage innovation.

⁵⁷¹ ZUBOFF, *supra* note 51, at 31.

⁵⁷² *Id.* at 47 (describing Gmail scanning emails for advertising); Alexander, *supra* note 186, at 6–7, 13 (dismissing antitrust law as a privacy solution but raising awareness about the data mining of emails); DUCCI, *supra* note 214, at 53 (noting that the data combination from email and maps may be used by advertisers); Ezrachi & Stucke, *supra* note 136, at 107 (adding private communications and even the use of microphones to listen to conversations as sources for predictive advertising).

⁵⁷³ DMA, *supra* note 1, at para. 72.

⁵⁷⁴ *Id.* at para. 75 and art. 14. The EC must also inform the European Data Protection Board. *Id.* at para. 75.

⁵⁷⁵ *Id.* at para. 72.

law infringements amounting to 10% of the total worldwide business turnover in the preceding financial year; up to 20% for repeated non-compliance and up to 1%⁵⁷⁶ for supplying incorrect, incomplete, or misleading information. There is also a novel recognition of the failure to provide access to databases and algorithms. However, access to algorithms may have implications for transnational proprietary information, including trade secrets. With the enactment of the DMA, the EC has capitalized its extended powers, including by gaining access to confidential data, algorithms, trials, and other information sources.⁵⁷⁷ The EC can also impose periodic penalty payments and reopen proceedings for non-compliance with the DMA.⁵⁷⁸

CONCLUSION

This article advances several research findings. Firstly, the regulatory approach to digital markets has overcome the inherent economic formalism of welfarist antitrust law by offering enhanced legal certainty to digital giants, as to their engagement in potential unfair-competition practices. The latter overlap to a certain extent with the controversial, but vague, catalogue of abuse of data by bringing antitrust law closer to unfair competition.

Secondly, unfair competition is the deontological epitome of the noble antitrust law that seeks to overcome toxic levels of competition. While the conservative antitrust paradigm of fair and contestable digital markets has been maintained, unfair competition has added wider public interest considerations, related to the economic privacy of confidential personal and sensitive data that can impact consumer wellbeing, including health, security, and other legitimate interests.

Thirdly, the DMA captures a novel hybrid status among transnational digital gatekeepers—somewhere beneath an outright monopoly and close to a data-oligopoly. This is used to calibrate any imbalances of bargaining power between core platforms and their users. While antitrust law has traditionally eyed the GAFAM trillionaires pentagram, the DMA lowers the bar to early intervention in cases with a much lower average-market capitalization.

Fourthly, the spotlight remains on the human-centric approach to unfair practices by adding to the existing fundamental rights and freedoms the freedom of consent for the privacy of users, in light of the fundamental antitrust values of non-discrimination, equality of opportunity, and fair and equal treatment of rivals and consumers.

Most importantly, this article argues that the utilitarian theory of economic control and digital domination, based on a retrospective analysis of past consumer behavior, intersects the evolutionary theory of economic dependence. However, the ethical theory of consumer behavior (based on the

⁵⁷⁶ *Id.* at art. 30.

⁵⁷⁷ *Id.* at art. 21, 22.

⁵⁷⁸ *Id.* at paras. 65, 69 and art. 31 (noting penalty payments should not exceed 5% of the daily average worldwide turnover and are limited to a five-year period).

predictive analysis of hidden vulnerabilities and unconscionability) is a better fit with the long overdue regulatory recognition of invasive deep consumer and automated profiling, conducted to reveal consumer buyer power.

Fifthly, as the DMA captures the unethical misuse of data to estimate consumer demand for AI and robotics, this article emphasizes the need for a theoretical paradigmatic shift from the antitrust theory of economic dependence to the unfair-competition theory of indiscriminate surveillance, which subordinates individual consumers to antagonistic corporate interests. Ultimately, this translates into a new antitrust theory of prevention, designed to counteract the emergence of consumer dependence on AI and robotics.

Sixthly, the concept of abuse remains capable of dealing with algorithmic self-preferencing, tying, FRAND terms of access to data, leveraging, and algorithmic terms and conditions under a human-centric approach to antitrust fairness and equal treatment for both businesses and consumers.

Seventhly, the DMA promises to deliver more against fraudulent, deceptive, and manipulative techniques involving the automated profiling of highly confidential data, especially aggregated and even anonymized data combination, which have exploited consumer behavior by undermining bargaining power and raising prices for consumers.

Finally, the DMA remains the unfortunate product of a dramatic compromise, designed to offer rivals access to valuable data, which can still have a negative impact on individual citizen consumers.

In conclusion, a dynamic interpretation of the DMA's novel types of unfair practices could fill in the regulatory gaps of Article 102 on the abuse of data.

NOTE

THE SPICE MUST FLOW: RISKS AND OPPORTUNITIES IN OFF-WORLD RESOURCE EXTRACTION

James Hallisey

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INTRODUCTION

Space, like the sea, does not fit the international system of nations. Defined borders are impossible to draw in the ocean, creating difficulties in defining sovereignty and title. Maritime law arose out of these difficulties, and perhaps the coming decades will see a similarly well-defined legal discipline arise in space. For now, however, the planet's patchwork of nations (and their varying legal systems) must either create new law or apply existing law to the issues created by space exploration.

While it presents opportunities, such as nigh-unlimited mineral wealth and an outlet for an expanding population, space colonization also presents dangers. The militarization of space has the potential to be a disaster for the planet and humankind. For example, A rogue actor could attach a rocket to a mid-sized asteroid and, with just a minor adjustment, redirect its path towards Earth.¹

The impressive effects on earth of past large meteoroids suggest the possibility that natural objects—earthcrossing asteroids—could be used as weapons on a scale more suitable for strategic deterrence, as are nuclear arsenals. Such notables as Carl Sagan, in discussing means of preventing catastrophic natural collisions, have expressed concern about the

¹ See *e.g.* Bob Preston, Dana J. Johnson, Sean J.A. Edwards, Michael Miller & Calvin Shipbaugh, *SPACE WEAPONS EARTH WARS 173* (2002).

possibility of deliberately deflecting an asteroid toward earth as a weapon.²

The relative ease with which a belligerent could create an extinction event akin to that which wiped out all non-avian dinosaurs sixty-five million years ago is staggering. With even fewer resources an entity could launch projectiles into orbit and destroy a critical satellite.³ Since the resulting debris would continue to orbit, impacting other satellites and creating further debris, such an action could create a deadly cascade.

Aggressive space activities without adequate safeguards could significantly shorten the time between collisions and produce an intolerable hazard to future spacecraft. Some of the most environmentally dangerous activities in space include . . . anti-satellite warfare using systems tested by the USSR, the US, and China over the past 30 years. Such aggressive activities could set up a situation where a single satellite failure could lead to cascading failures of many satellites in a period much shorter than years.⁴

Past a certain critical point, this cascade would become a rapidly orbiting cloud of mechanical wreckage. Such a cloud would make earth-based space launches difficult, if not impossible, as any space vehicle would then have to run an increasingly thick gauntlet of debris to reach orbit.⁵

A relatively minor action taken in anger could ground humankind on a warming and overpopulated planet for generations, unable to find solace in escape to the stars.⁶

Such apocalyptic scenarios currently exist in the realm of speculation and science fiction. However, militarization of space is a real threat currently within the capabilities of Earth's nations.⁷ Fears of satellite-based nuclear weapons inspired several international agreements, chief among them the

² *Id.* at 173.

³ In 2021, the Russian Federation launched a missile into orbit and destroyed one of its satellites. This weapons test sparked international outcry, as the pieces of the shattered satellite added to an already-unstable orbital debris environment. See Paul Rincon & Jonathan Amos, *Russian anti-satellite test adds to worsening problem of space debris*, BBC NEWS (November 16, 2021), <https://www.bbc.com/news/science-environment-59307862>.

⁴ Such a cascade, and the ensuing cloud of debris, is known as Kessler syndrome. See Donald J. Kessler, *The Kessler Syndrome* (Mar. 8, 2009), <https://web.archive.org/web/20100527195029/http://webpages.charter.net/dkessler/files/KesSym.html>.

⁵ Donald J. Kessler & Burton G. Cour-Palais, *Collision Frequency of Artificial Satellites: The Creation of a Debris Belt*, 83 J. OF GEOPHYSICAL RSCH. 2637, 2637 (1978).

⁶ Paul Ratner, *How the Kessler Syndrome can end all space exploration and destroy modern life*, BIG THINK (Aug. 29, 2018), <https://bigthink.com/surprising-science/how-the-kessler-syndrome-can-end-all-space-exploration-and-destroy-modern-life/>.

⁷ See Miriam Kramer, *Nations around the world moved toward militarizing space last year*, AXIOS (Mar. 31, 2020), <https://www.axios.com/militarizing-space-satellites-5b27724b-886e-470a-8087-cea2137448e8.html>.

Outer Space Treaty of 1967. This stipulated that space would be used for peaceful purposes, for the common benefit of all humanity.⁸ Half a century on, however, this utopian vision of the world's nations peacefully stepping hand-in-hand into the great beyond no longer reflects reality. The United States, United Arab Emirates, Luxembourg, and Japan have all passed private space-resource extraction statutes.⁹ These allow corporations to claim title to any off-world resources they extract.¹⁰ Furthermore, the formation of the United States Space Force has reawakened fears of a militarized space.¹¹

The stated purpose of the Space Force is to “protect the interests of the United States in space, deter aggression in, from, and to space, and conduct space operations.”¹² Do “the interests of the United States in space” extend to American corporations’ title to off-world resources? In this note, I plan to examine the legality of asteroid mining and the American Space Force under the OST. I will discuss current resource law around off-world mining, specifically on asteroids. This will include analysis of the “Spurring Private Aerospace Competitiveness and Entrepreneurship (SPACE) Act of 2015.” Finally, I will analyze the dangers around this nascent industry, including international sabotage and space piracy. I will argue that the United States Space Force is legal and necessary as long as it serves a purely defensive role, protecting colonies and mining operations. Contrary to its portrayal as an unnecessary vanity project, the Force can be a critical actor of the near future.¹³ Without a space force, corporate interests could themselves militarize, creating unaccountable and heavily armed extranational entities reminiscent of the exploitative British and Dutch East India Companies.¹⁴ As terrifying as

⁸ See Space Foundation Editorial Team, *International Space Law*, SPACE FOUNDATION (2019), https://www.spacefoundation.org/space_brief/international-space-law/.

⁹ See Juan Pons, *US, Luxembourg, Emirates and now Japan take the lead to exploit space mining*, ATALAYAR (Jul. 28, 2021), <https://atalayar.com/en/content/us-luxembourg-emirates-and-now-japan-take-lead-exploit-space-mining>.

¹⁰ See e.g. Keisuke Katori & Shiori Ogawa, *New Legislation Gives Companies Legal Rights to Lunar Resources*, THE ASAHI SHIMBUN (Sep. 1, 2021), <https://www.asahi.com/ajw/articles/14420386>.

¹¹ See Ramin Skibba, *How Trump's Space Force Could Set Off a Dangerous Arms Race*, POLITICO (June 22, 2018), <https://www.politico.com/magazine/story/2018/06/22/how-trumps-space-force-could-set-off-a-dangerous-arms-race-218888/>.

¹² See Maj. Cody Chiles, *14th Air Force Redesignated as Space Operations Command*, SPACE FORCE NEWS (Dec. 27, 2019), <https://www.spaceforce.mil/News/Article/2048114/14th-air-force-redesignated-as-space-operations-command/>.

¹³ See e.g. Michael E. O'Hanlon, *The Space Force is a misguided idea. Congress should turn it down.*, BROOKINGS (Apr. 20, 2019), <https://www.brookings.edu/blog/order-from-chaos/2019/04/20/the-space-force-is-a-misguided-idea-congress-should-turn-it-down/>.

¹⁴ See e.g. Scott Rank, *History Unplugged Podcast: Age of Discovery 2.0, Part 6: Will SpaceX Control Mars Like the British East India Company Controlled the Indian Subcontinent?*, SALEM MEDIA (Nov. 18, 2021), <https://www.historyonthenet.com/episode-6-spacex-and-british-east-india-company>.

a celestial armada loyal only to Amazon's shareholders may sound, the opposite is equally as dangerous. A space force with offensive capabilities could alarm America's international rivals enough to spur a new arms race.¹⁵ This disastrous outcome could see orbital missiles trained on the world's major cities, needing only a spark to consummate a new Mutually Assured Destruction.

My note will argue the need to heavily restrain the new Space Force, and to use it only to defend the peaceful commercialization and colonization of space. I will first discuss the rewards, and risks, of expanding off-world resource extraction capabilities. I will then analyze current foreign and domestic space law, including the 1967 Outer Space Treaty and the 2015 U.S. Commercial Space Launch Competitiveness Act. Finally, I will describe the inception of the United States Space Force. I will argue that the USSF is legal and necessary to defend valuable extraplanetary resources from terrorism and war. This note will show that the Space Force can be a positive institution, one poised to safeguard the future of all humankind.

ASTEROID AND EXTRAPLANETARY MINING

Celestial resource extraction, once consigned to the realm of far-future science fiction, is now a technology on the cusp of full realization. Even science fiction recognizes the imminence of the economic boom that will come with the new technology. Daniel Suarez's *Delta-V*, for example, envisions a manned mission to a near-earth asteroid taking place in 2032.¹⁶ While the novel is set a decade in the future, Suarez makes sure to only depict technology that can currently be produced.¹⁷ *Delta-V* is a science fiction adventure, but it is also a thinly veiled piece of advocative material. Suarez insists that the future of the novel does not require wondrous advances in spacefaring capabilities, simply a massive influx of capital.¹⁸ While this pool of funding is not available to the likes of NASA, it is increasingly available to those most interested in a future off-world: tech billionaires. In the last two years, the collective fortune of American billionaires increased by more than 70%.¹⁹ The richest and highest-profile of these select few are those most interested in space. Amazon founder Jeffrey Bezos used one billion dollars of Amazon stock per year to fund his space conglomerate Blue Origin.²⁰ Like the

¹⁵ See *supra* note 11.

¹⁶ See Tom Shippey, *Science Fiction: The New Off-World Economy*, WALL ST. J. (May 17, 2019), <https://www.wsj.com/articles/science-fiction-the-new-off-world-economy-11558125151>.

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ See Chuck Collins, *U.S. Billionaires are Now \$2.1 Trillion Richer Than Before the Pandemic*, INEQUALITY.ORG (Oct. 18, 2021), <https://inequality.org/great-divide/billionaires-2-trillion-richer-than-before-pandemic/>.

²⁰ Michael Sheetz, *Jeff Bezos doubles time with Blue Origin to focus more on his space*

technology in *Delta-V*, the massive infusion of capital in Daniel Suarez's novel is not too far off either. Bezos and his compatriots are directly invested in the extraction of space-based resources. Blue Origins vision statement reads:

Blue Origin was founded by Jeff Bezos with the vision of enabling a future where millions of people are living and working in space for the benefit of Earth. In order to preserve Earth, Blue Origin believes that humanity will need to expand, explore, find new energy and material resources, and move industries that stress Earth into space.²¹

Bezos is willing to attach his name to this mission, one that places finding new energy and resources front and center. This commitment is supported by recent financial moves as well. Blue Origin is in the process of acquiring Honeybee Robotics, a startup developing technology to autonomously mine asteroids.²² Honeybee already has products capable of collecting off-world material: NASA used its Phoenix Scoop to successfully collect samples of Martian soil.²³ Honeybee has been at the heart of planned asteroid mining missions since at least 2002.²⁴ Honeybee's World Is Not Enough (WINE) system can extract trapped volatiles, like water, from asteroid minerals by heating the asteroid material.²⁵ The water is then converted to steam by 3D printed thrusters, which WINE can use to lift off an asteroid with whatever payload it may have acquired.²⁶ Unfortunately for Honeybee, Blue Origin's rockets are not currently the best options for delivering these systems.²⁷ Elon Musk's SpaceX corporation is in the process of developing rockets that can refuel in orbit, increasing carrying capacity by eliminating the need for fuel tanks capable of escaping the atmosphere.²⁸ These rockets could thereby

company, CNBC (Sep. 27, 2021), <https://www.cnbc.com/2021/09/27/jeff-bezos-doubles-blue-origin-time-to-focus-more-on-his-space-company.html>.

²¹ *About Blue Origin*, BLUE ORIGIN, <https://www.blueorigin.com/about-blue>.

²² See Tim Shea, *Robotic Asteroid Mining Company Honeybee Robotics to be Acquired by Blue Origin*, ARC ADVISORY GROUP (Jan. 27, 2022), <https://www.arcweb.com/blog/robotic-asteroid-mining-company-honeybee-robotics-be-acquired-blue-origin>.

²³ See *Sample Processing, Manipulation & Containment*, HONEYBEE ROBOTICS (Jun. 2, 2008), <https://web.archive.org/web/20080602091925/http://honeybeerobotics.com/isad.html>.

²⁴ See Derek Sears et al., *The Hera mission: multiple near-earth asteroid sample return*, 34 *ADV. IN SPACE RES.* 2270 (2004).

²⁵ See Adam Hugo, *Honeybee Robotics Demonstrates, WINE*, The Space Resource (Jan. 3, 2019), <https://www.thespaceresource.com/news/2019/1/honeybee-robotics-demonstrates-wine> [<https://perma.cc/PV34-5VKD>].

²⁶ See *id.*

²⁷ See *SpaceX, Blue Origin and Asteroid Mining*, ASTEROID MINING CORPORATION (2022), <https://asteroidminingcorporation.co.uk/spacex-blue-origin-and-asteroid-mining> [<https://perma.cc/2ARW-45GE>].

²⁸ See *id.*

carry asteroid mining platforms weighing more than 100 metric tons. Most of this would be reserved for payload, filled with metals worth hundreds of dollars per ounce.²⁹ While SpaceX may currently lead Blue Origin in rocket capability, both are cognizant of the staggering economic potential of asteroids. A metallic body with a diameter of a mile could contain 20 trillion dollars of mineral wealth.³⁰ This is about the yearly gross domestic product of the United States, the largest economy to ever exist, in a single rock.³¹ Estimates place around 100 such asteroids within reach of current rocket technology.³² Every time a new heavy rocket with increased range is developed, this number can increase by a factor of ten.³³ The mineral wealth locked away in the asteroids that pervade our solar system, dwarfs that available on Earth. This wealth has spawned a new space race, not between ideologically competing countries but instead between financially competing corporations.

Profit, however, is not the sole motivation for prospecting among the stars. Modern society relies on resources that are depleting at an accelerating rate. Some experts predict that even common metals like iron and aluminum will enter shortage-induced production decline in the next fifty years.³⁴ Recycling can mitigate the exhaustion of rare-earth metals such as lanthanum, but these and other scarce minerals are necessary components in the technology that drives modern society.³⁵ These elements are so critical that the Pentagon has centered strategic defense planning for the twenty-first century around securing them.³⁶ Asteroid mining could halt this depletion, averting

²⁹ *Platinum Price Today USD per Ounce*, BULLION BY POST (Jan. 20, 2022), <https://www.bullionbypost.com/platinum-price/platinum-price-today/> [<https://perma.cc/GLG9-SU8R>].

³⁰ See John Aziz, *How asteroid mining could add trillions to the world economy*, THE WEEK (Jan. 11, 2015), <https://theweek.com/articles/462830/how-asteroid-mining-could-add-trillions-world-economy> [<https://perma.cc/SFA8-L7PB>].

³¹ *Gross Domestic Product*, BUREAU OF ECONOMIC ANALYSIS (Jan. 27, 2021), <https://www.bea.gov/data/gdp/gross-domestic-product> [<https://perma.cc/647Y-NEBM>].

³² See Andrew Glester, *The Asteroid Trillionaires*, PHYSICS WORLD (Jun. 11, 2018), <https://physicsworld.com/a/the-asteroid-trillionaires/> [<https://perma.cc/SH5F-UXV5>].

³³ See *id.*

³⁴ See Alicia Valero & Antonio Valero, *Physical Geonomics: Combining the Exergy and Hubbert Peak Analysis for Predicting Mineral Resources Depletion*, 54 RES., CONSERVATION, AND RECYCLING, 1074 (2010).

³⁵ See Cristina Pozo-Gonzalo, *Demand for Rare-Earth Metals is Skyrocketing, so We're Creating a Safer, Cleaner Way to Recover Them from Old Phones and Laptops*, THE CONVERSATION (Apr. 15, 2021), <https://theconversation.com/demand-for-rare-earth-metals-is-skyrocketing-so-were-creating-a-safer-cleaner-way-to-recover-them-from-old-phones-and-laptops-141360> [<https://perma.cc/NYC8-WWY3>].

³⁶ See Michael T. Klare, *The New Geopolitics of Energy*, THE NATION (May 1, 2008), <https://www.thenation.com/article/archive/new-geopolitics-energy/> [<https://perma.cc/4KUR-G3X7>].

technological regression and devastating resource wars.³⁷ Furthermore, the current rare-earth metal economy presents major issues. The People's Republic of China dominates extraction, accounting for around 90% of total material.³⁸ This could give China monopolistic leverage over the rest of the world.³⁹ This is not without peril, however, as rare-earth metal extraction is catastrophic for the environment.⁴⁰ Heavy metals leech into local groundwater, rendering it toxic enough to cause ecological collapse.⁴¹ While rocket launches cause their own significant environmental harms, current studies show that this impact is overall lower than that of terrestrial rare-earth mining.⁴² Eventually, most launches will depart from orbital platforms, removing even the impact of heavy-fuel takeoffs.⁴³ In the long-term, asteroid mining is environmentally preferable to stripping the Earth of its metals.

Metals are important, but asteroid capture and mining can solve far more dangerous shortages. Overpopulation, fuel depletion, and lack of potable water, if left unchecked, could spell the end of human civilization. Fortunately, given sufficiently advanced technology, asteroids can be rerouted into stable earth orbit.⁴⁴ With orbital fabrication platforms, these can then be converted into space habitats and solar-powered satellites. While this capture and fabrication is currently beyond the capabilities of human civilization, such an aspiration promises stunning possibilities.⁴⁵ The metal in an asteroid with a diameter of about half a mile could be converted to an orbital habitat for one million people and create enough solar-powered satellites to satisfy mankind's energy needs for the next thousand years.⁴⁶ Even more crucial than energy is water. Four billion people, more than half of the current global population, face severe water scarcity at least one month of every year.⁴⁷ An

³⁷ See Michael Klare, *Averting A World Of Failed States And Resource Wars*, LOBE LOG (Nov. 4, 2015), <https://lobelog.com/averting-a-world-of-failed-states-and-resource-wars/> [<https://perma.cc/9BCJ-DGYK>].

³⁸ See *How Rare-Earth Mining Has Devastated China's Environment* EARTH.ORG (Jul. 14, 2020), <https://earth.org/rare-earth-mining-has-devastated-chinas-environment/> [<https://perma.cc/N5FP-D6L6>].

³⁹ See *id.*

⁴⁰ See *id.*

⁴¹ See *id.*

⁴² See James Temple et al., *Asteroid Mining Might Actually be Better for the Environment*, MIT TECHNOLOGY REVIEW (Oct. 19, 2018), <https://www.technologyreview.com/2018/10/19/139664/asteroid-mining-might-actually-be-better-for-the-environment/> [<https://perma.cc/Z5AG-7R3S>].

⁴³ See *id.*

⁴⁴ See Stephen D. Covey, *Technologies for Asteroid Capture into Earth Orbit*, NATIONAL SPACE SOCIETY (May 2011), <https://space.nss.org/technologies-for-asteroid-capture-into-earth-orbit/> [<https://perma.cc/GCK5-QMB5>].

⁴⁵ See *id.*

⁴⁶ See *id.*

⁴⁷ See Mesfin M. Mekonnen & Arjen Y. Hoekstra, *Four Billion People Facing Severe*

increasing population will only exacerbate this shortage. Fortunately, “hydrated” asteroids contain significant accessible water.⁴⁸ There are around one thousand such near-earth asteroids potentially easier to reach than the lunar surface.⁴⁹ These alone could introduce billions of gallons into the global water supply.⁵⁰ Once Earth civilization solves its water crisis, further hydrated asteroids, comets, and even the icy poles of the Moon and Mars can fuel humanity’s astral diaspora. Water can eventually be converted to fuel for space vehicles.⁵¹ It can also be used to sustain human populations on starships, orbital habitats, and planets across the solar system.⁵² A theory for the origin of water on Earth holds that it arrived on space rocks that bombarded the young planet shortly after its formation.⁵³ As humanity disperses among the stars, it may too source its water from asteroids.

This future in space requires legal certainty, as corporations will not stake billions unless they can be sure they own what they extract. However, it also requires another form of security, one that is impossible to provide without a body equipped to maintain peace beyond the atmosphere.

SPACE THREATS

Functionally limitless resource wealth will inspire aggressive actors to secure their share with force. Commercial activity in space presents incredible opportunities, but history suggests that these will not come without piracy and violent conflict. Space, like the ocean, does not fit into a system of terrestrial states with defined borders. Both are vast, treacherous, and incredibly difficult to police. It is not surprising, then, that some suggest principles of maritime law should apply in space.⁵⁴ Suggested principles to translate into space law include the limited liability imputed on operators when a ship is

Water Scarcity, 2 SCI. ADV. 2 (2016).

⁴⁸ See Nola Taylor Tillman, *Tons of Water in Asteroids Could Fuel Satellites, Space Exploration*, SPACE.COM (Sep. 29, 2019), <https://www.space.com/water-rich-asteroids-space-exploration-fuel.html> [<https://perma.cc/37J3-WD25>].

⁴⁹ See *id.*

⁵⁰ See Meghan Bartels, *How Much Water May Be Tucked Away in Nearby Asteroids?*, SPACE.COM (Mar. 11, 2019), <https://www.space.com/how-much-water-in-asteroids.html> [<https://perma.cc/ZSV9-CKAV>].

⁵¹ See *id.*

⁵² See *id.*

⁵³ See Elizabeth Howell, *Meteorites Brought Water To Earth During the First Two Million Years*, ASTROBIOLOGY AT NASA (Feb. 14, 2018), <https://astrobiology.nasa.gov/news/meteorites-brought-water-to-earth-during-the-first-two-million-years/> [<https://perma.cc/7LKC-7A64>].

⁵⁴ See generally Rachel Rogers, *The Sea of the Universe: How Maritime Law’s Limitation on Liability Gets it Right, and Why Space Law Should Follow by Example*, 26 IND. J. GL. L. STUD. 741 (2019).

damaged at sea (or in this case in space).⁵⁵ Maritime law can also provide a framework in the realm of piracy. Corsairs historically reach heights of power when large stores of valuable mineral wealth are transported in ocean-going ships across long distances. The first recorded instances of piracy occurred in the Mediterranean around three thousand years ago.⁵⁶ This directly coincides with the late Bronze Age, when oceangoing ships transported large quantities of tin (possibly from the British Isles) to the Eastern Mediterranean.⁵⁷ As tin is a necessary component in manufacturing bronze, societies such as the New Kingdom of Egypt and the Middle Assyrian Empire depended on these shipments.⁵⁸ This age of literacy and international trade burned in the infamous Bronze Age Collapse.⁵⁹ Some scholars believe the destructive “sea peoples,” implicated in many records of the time, were highly successful pirates preying on vital tin shipments.⁶⁰ Similarly, the so-called “golden age of piracy (around 1650 – 1726) coincides directly with a period in which Spanish and Portuguese colonizers employed “treasure fleets” to ship massive quantities of silver and gold from South America and Mexico to the Iberian Peninsula.⁶¹ Large shipments of mineral wealth across non-national space historically inspire an upswing in piracy. If asteroid mining takes the form discussed in the previous section, it is likely that non-state actors will develop methods to interdict mineral shipments. This does not necessarily need to take the form of a swashbuckling boarding action (which risks a hull breach, jettisoning all cargo and everyone involved into the deadly vacuum of space). Over a month-long period in 2011, NASA reported more than five thousand incidents of “malicious software or unauthorized access, in some cases described as having ‘full control over those networks.’”⁶² These cyberattacks could misdirect metal-laden vessels, but even information itself

⁵⁵ *See id.*

⁵⁶ See Joshua J. Mark, *Pirates in the Ancient Mediterranean*, WORLD HISTORY ENCYCLOPEDIA (Aug. 19, 2019), <https://www.worldhistory.org/Piracy/> [<https://perma.cc/9HJN-ZVAR>].

⁵⁷ See Bowczarek, *Bronze Age Interactions: The Tin Trade*, REAL ARCHAEOLOGY (Sep. 30, 2017), <https://pages.vassar.edu/realarchaeology/2017/09/30/bronze-age-interactions-the-tin-trade/> [<https://perma.cc/V3VY-4ZSY>].

⁵⁸ *See id.*

⁵⁹ Brandon L. Drake, *The Influence of Climate Change on the Late Bronze Age Collapse and the Greek Dark Ages*, 39 J. ARCHAEOLOGY SCI. 1862, 1862 (2012).

⁶⁰ See Sally Mallam, *The Bronze Age Collapse*, HUMAN JOURNEY (last visited Feb. 10, 2023), <https://humanjourney.us/ideas-that-shaped-our-modern-world-section/the-bronze-age-collapse/> [<https://perma.cc/NK77-2L4K>].

⁶¹ See Baylus C. Brooks, *How a Force of Nature Created the Golden Age of Piracy*, MEDIUM (Jul. 21, 2020), <https://medium.com/@baylusbrooks/how-a-force-of-nature-created-the-golden-age-of-piracy-3b9866aeb6a0> [<https://perma.cc/9YRU-JSHR>].

⁶² See Gregory D. Miller, *Space Pirates, Geosynchronous Guerillas, and Nonterrestrial Terrorists: Nonstate Threats in Space*, 33 AIR & SPACE POW. J. 33, 42 (2019).

may prove valuable to competitors or other pirates.⁶³ Moreover, threats to human activity in space are unlikely to remain purely economic in motivation. The cost per kilogram to place an object in orbit decreased by a factor of 10 between 2011 and 2021.⁶⁴ This trend will likely continue as rocket technology improves until orbital capacity is achievable by nonstate, non-corporate actors. Pirates may be joined by terrorists and guerrillas, able to target space-based infrastructure to enforce their demands.⁶⁵

Spaceships themselves may currently remain solely in the hands of governments and corporations. However, those with hostile intent need not leave the Earth's surface to interfere with space infrastructure. Cyberattacks have confounded NASA for at least a decade.⁶⁶ As previously discussed, problems with a single satellite can cause a crash that cascades into a devastating cloud of orbital debris.⁶⁷ In 2007, the Sri Lankan separatist Liberation Tigers of Tamil Eelam (better known as the Tamil Tigers) hacked an Intelsat satellite over the Indian Ocean to broadcast propaganda.⁶⁸ In 2013, hackers used television emergency broadcast systems in Montana and Michigan to report a zombie apocalypse.⁶⁹ They most likely accomplished this by gaining unauthorized access to a satellite.⁷⁰ These information-focused hacks may appear relatively harmless. However, if hostile actors managed to gain access to satellite navigation systems, they could create a timed collision and initiate a deadly debris cascade.⁷¹ Recognizing the vulnerability of the spaceborne global communications system, governments are developing ways to combat cyberterrorism. In 2020, the U.S. Air Force invited the public to hack a military satellite.⁷² These "hackathons" expose cybersecurity vulnerabilities and allow their initiators to develop countermeasures.⁷³ Hopefully, these can be

⁶³ *See id.*

⁶⁴ *See* Nathan Strout, *Head of UK's Space Directorate warns of space terrorism*, DEFENSENEWS (Sep. 14, 2021), <https://www.defensenews.com/digital-show-dailies/dsei/2021/09/14/head-of-uks-space-directorate-warns-of-space-terrorism/> [<https://perma.cc/VZ6Y-E4CG>].

⁶⁵ *See* Miller *supra* note 62, at 34.

⁶⁶ *See id.*

⁶⁷ *See* Keller *supra* note 4.

⁶⁸ *See* Pierluigi Paganini, *Hacking Satellites . . . Look Up to the Sky*, INFOSEC (Sep. 18, 2013), <https://resources.infosecinstitute.com/topic/hacking-satellite-look-up-to-the-sky/>, [<https://perma.cc/U6QJ-Y4LJ>].

⁶⁹ *See id.*

⁷⁰ *See id.*

⁷¹ *See* Keller *supra* note 4. On the bright side, a Kessler effect apocalypse would (at least hopefully) spare humanity the unrelenting onslaught of our own reanimated dead.

⁷² *See* Younis Dar, *Why Satellite Hacking Has Become The 'Biggest Global Threat' For Countries Like US, China, Russia & India?*, THE EURASIAN TIMES (Oct. 24, 2020), <https://eurasianimes.com/why-satellite-hacking-has-become-the-biggest-global-threat-for-countries-like-us-china-russia-india/> [<https://perma.cc/HA2Q-9XUG>].

⁷³ *See id.*

diffused to civilian satellite operators. The relative ease of initiating a debris cascade means that cybersecurity is vital for every piece of equipment in orbit, from orbital platforms like the ISS down to the smallest probe.⁷⁴

Unfortunately, there is currently not a coherent body of American or international law governing space piracy.⁷⁵ Fitting cybercrimes against satellites into such a framework could allow international law enforcement to target an activity presenting dangers far worse than prank broadcasts.⁷⁶ Space Piracy “could affect cellphone coverage, interfere with airliners’ ability to navigate, impair hospitals’ ability to access health information, threaten multibillion dollar investments involving nations’ tax dollars, harm a nation’s defensive capabilities, and negatively impact humanity’s future.”⁷⁷ Unfortunately, even if law enforcement catches space criminals, bringing them to justice presents legal difficulties.⁷⁸ The issue of jurisdiction came to the fore in 2019:

On August 23 of that year, The New York Times broke the story U.S. Astronaut Anne McClain was accused of illegally accessing bank accounts that were at least jointly owned by her estranged spouse. The plot twist was she did it not from her home, nor from a training facility on Earth; she was on the International Space Station (ISS).⁷⁹

Since this crime occurred aboard the ISS, an international agreement governed the jurisdiction question.⁸⁰ One potential option to combat space crime is the doctrine of Universal Jurisdiction (UJ).⁸¹ Originally developed to combat piracy in international waters, UJ established jurisdiction for crimes

⁷⁴ See *supra* note 4.

⁷⁵ Kelly Dickerson, *How to become a space pirate*, BUSINESS INSIDER (Jan. 19, 2016), <https://www.businessinsider.com/space-pirate-law-international-waters-2015-10> [<https://perma.cc/75N5-NHJL>].

⁷⁶ Michael Viets, *Piracy in an Ocean of Stars: Proposing a Term to Identify the Practice of Unauthorized Control of Nations’ Space Objects*, 54 STAN. J. INT’L L. 159, 161 (2018).

⁷⁷ *Id.*

⁷⁸ See generally Taylor Stanton Hardenstein, *In Space, No One Can Hear You Contest Jurisdiction: Establishing Criminal Jurisdiction of the Outer Space Colonies Tomorrow*, 81 J. AIR L. & COM. 251 (2016).

⁷⁹ Reid White, *Plugging the Leaks in Outer Space Criminal Jurisdiction: Advocacy for the Creation of a Universal Outer Space Criminal Statute*, 35 EMORY INT’L L. REV. 333 (2021).

⁸⁰ See Agreement Among the Government of Canada, Governments of Member States of the European Space Agency, The Government of Japan, the Government of the Russian Federation, and the Government of the United States of America Concerning Operation on the Civil International Space Station, Art. 22, T.I.A.S. no.

12927, Jan. 29, 1998

⁸¹ See *supra* note 79 at 358.

committed outside the boundary of any state.⁸² This appears perfect for space piracy. However, UJ is customarily restricted to “crimes against all of mankind: slavery, piracy, genocide, crimes against humanity, crimes of aggression, war crimes, and torture.”⁸³ While this includes piracy, cybercrimes against satellites do not currently fall under an international law framework for “space piracy.”⁸⁴ Therefore, some legal scholars propose the establishment of a broad “Outer Space Criminal Statute.”⁸⁵ However, such a statute does not currently exist. To combat threats in space, governments and corporations need a robust law enforcement body. This should go hand in hand with a clear legal framework for enforcement (like the hypothetical Outer Space Criminal Statute). However, governments must first establish that they *can* enforce their laws in outer space. This requires an analysis of the current international space law.

THE OUTER SPACE TREATY

The Outer Space Treaty (OST) is formally known as “the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.” This mouthful of an international agreement is the foundation of global space law. The United States, United Kingdom, and the Soviet Union signed onto the document in 1967.⁸⁶ Like the prior Antarctic Treaty, the OST aimed to prevent the Cold War from spilling over into new frontiers. Like Antarctica, space was a relatively new province of human exploration. Unlike the southernmost continent, however, no nations laid claim to any part of what lay beyond Earth’s atmosphere. Aside from parallels with maritime law, space had no preexisting legal foundation. However, the framers of the OST did not set out to codify nascent space law. The OST is intrinsically linked to what was the most pressing issue of the time: nuclear weapons. The belligerents of the Cold War, in keeping with the paranoia of the age, saw the potentially unlimited resources of space as a secondary concern to its potential as a staging ground for nuclear Armageddon. This concern was likely justified, as the technology of the time allowed for suborbital nuclear missiles and satellites armed with atomic payloads, rather than mining ships. That this has not changed reflects the shadow the Cold War still casts over space. Stakeholders still see space as

⁸² *See id.*

⁸³ *See id.* at 359; *see also* Noora Arajärvi, *Looking Back from Nowhere: Is There a Future for Universal Jurisdiction over International Crimes?*, 16 TILBURG L. R. 5, 6–7 (2011).

⁸⁴ *See supra* note 76.

⁸⁵ *See generally supra* note 79.

⁸⁶ *See* Bureau of Arms Control, Verification, and Compliance, *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies: Narrative*, U.S. DEPARTMENT OF STATE (archived, Jan. 20, 2009 – Jan. 20, 2017), <https://2009-2017.state.gov/t/isn/5181.htm#narrative> [<https://perma.cc/76XD-LZD2>].

a front in a potential global war, so a Cold War treaty still governs its law.

The OST has been characterized as the “Magna Carta’ of space law.”⁸⁷ Article I of the OST states,

The exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind.

Outer space, including the moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies.⁸⁸

This egalitarian, even utopian, language is the lynchpin of the OST. The drafters envisioned it truly as an agreement that put space beyond the nations and wars of the *terra firma*. Placing the OST’s basis in international law is important. It means that gaps or vague language can be filled with international law principles from other areas.⁸⁹ However, unlike terrestrial international law, state actors cannot claim sovereignty over unoccupied “land.”⁹⁰ Article II continues, “Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.”⁹¹ Therefore, despite a lunar star-spangled banner that fails to flap for lack of wind, the United States did not claim sovereignty over any part of the moon in 1969. However, Article VI states,

States Parties to the Treaty shall bear international responsibility for national activities in outer space . . . whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. The activities of non-governmental entities in outer space . . . shall require authorization and continuing supervision by the appropriate State Party to the Treaty.⁹²

This is perhaps the most important provision of the OST for those

⁸⁷ Skip Smith, A Space Law Primer for Colorado Lawyers, 47-MAR COLAW 48.

⁸⁸ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty), Art. I, Jan. 27, 1967, 18 UST 2410.

⁸⁹ See *supra* note 87.

⁹⁰ International law theoretically allows for sovereignty by acquisition of *terra nullis* or unoccupied territory. See *e.g.* Eyal Benvenisti, The International Law of Occupation, 24, EURO. J. INTL. LAW, 453, 454 (2012); see also Mark A.A. Smith, *Sovereignty over Unoccupied Territories – The Western Sahara Decision*, 9 Case West. Res. J. of Int’l Law 135 (1977).

⁹¹ *Supra* note 88, Art. II.

⁹² *Id.*, Art. VI.

interested in extracting extraterrestrial resources. The Soviet Union, being ideologically opposed to private corporations (and capitalism in general), wanted the treaty to only allow states to operate in space.⁹³ Article VI is a compromise. It ensures that non-state actors are supervised by national governments.⁹⁴ This compromise between ideological enemies forms the basis for U.S. Space regulations like the 2015 SPACE Act. Under international law, the United States has the authority to regulate and monitor private entities. Therefore, the foundational document of space law permits private resource extraction and oversight by national governments.

Such oversight must be carried out by some body with powers of enforcement. However, Article IV of the OST (in addition to banning orbital nuclear weapons) states,

The Moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military maneuvers on celestial bodies shall be forbidden.⁹⁵

This provision purports to ban any sort of offensive military action in space. However, as recent anti-satellite weapon tests demonstrate, parties subject to the OST do not always follow the spirit of the article.⁹⁶ Furthermore, military reconnaissance satellites have been a mainstay of armed-forces capabilities for decades.⁹⁷ Countries routinely use their satellites to designate targets in highly offensive actions.⁹⁸ This demonstrates that, in

⁹³ See *supra* note 87.

⁹⁴ *Id.*

⁹⁵ *Supra* note 88, Art. IV.

⁹⁶ See Rincon & Amos *supra* note 3.

⁹⁷ See, e.g., Nancy Gallagher & John David Steinbruner, *Reconsidering the Rules for Space Security: Origins of the Rules for Space*, AM. ACAD. OF ARTS & SCI. (Apr. 2008), <https://www.amacad.org/publication/reconsidering-rules-space-security/section/9>; See *Bahrampour v. U.S.*, No. 2:15-cv-01194-MMD-VCF, 2015 WL 4997326, at *3 (D. Nev. Aug. 20, 2015). The validity of spy satellites under the OST has, however, been challenged. In *Bahrampour*, 2015 WL 4997326, the plaintiff alleged that the NSA violated the OST by spying on American citizens using satellites. However, plaintiff also alleged that, 1–16,500 NSA agents are responsible for NSA Nueral [sic] Remote Monitoring (NRM) from Ft. Meade on (SIGNIT) Signals Intelligence Network that have harassed, tormented me psychologically followed me via EMF, etc. that caused a violation under civil rights § 1983 under color of law to my 14th Amendment rights & 4th or free speech and due process privacy. Additionally, Plaintiff alleged that the “FCC does violate my civil rights by allowing NSA/CIA to use the 3hz50hz frequencies that the human brain uses for EMP waves and its own purposes.” The reviewing court dismissed Bahrampour’s complaint for failure to state a claim.

⁹⁸ See Gerald P. Frost & Irving Lachow, *Satellite navigation-aiding for ballistic and cruise missiles*, RAND CORPORATION (1996), <https://www.rand.org/pubs/reprints/RP543.html>.

practice, “peaceful” is most often read to mean “nonaggressive.”⁹⁹ Military activity in space is not necessarily illegal under the OST. Article IV states, “The use of military personnel for . . . peaceful purposes shall not be prohibited.”¹⁰⁰ As long as resource extraction does not stake a claim of national sovereignty over any celestial body, mining in space is legal under the OST.¹⁰¹ In addition, as long as its actions are defensive and peaceful, a military force policing this mining is legal under the OST.¹⁰² Therefore, foundational international law does not prevent the Space Force from acting as a defense force for private interests in space.

The success and widespread adoption of the OST inspired attempts to further develop international space law. A decade of negotiations produced the “Agreement Governing the Activities of States on the Moon and Other Celestial Bodies,” known as the Moon Treaty.¹⁰³ However, this document has not enjoyed the universal acceptance of the OST. Critically, the United States, the Soviet Union (and currently the Russian Federation), and the People’s Republic of China did not sign the treaty.¹⁰⁴ These were, and continue to be, the three countries most capable of conducting operations in space. Their refusal to sign the Moon Treaty signaled a rejection of the peaceful idealism of the OST. Previously committed to using the moon and other celestial bodies only for peaceful purposes, the major powers now refused to sign an anti-armament agreement. The Moon Treaty took too much agency from the individual powers, and in their view, it aggrandized the United Nations’ power in space. Article 4 of the Moon Treaty reads in part,

The exploration and use of the moon shall be the province of all mankind and shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development. Due regard shall be paid to the interests of present and future generations as well as to the need to promote higher standards of living and conditions of economic and social progress and development in accordance with the Charter of the United Nations.¹⁰⁵

This essentially mirrors language in the original OST. However, it does shift away from language in the Outer Space Treaty that allows for private resource extraction. Articles 5 and 11 present the primary obstacles to widespread adoption. Article 5 provides in part,

⁹⁹ See Gallagher & Steinbruner, *supra* note 97.

¹⁰⁰ Outer Space Treaty, *supra* note 88, Art. IV.

¹⁰¹ *Id.* at Art. II.

¹⁰² *Id.* at Art. IV.

¹⁰³ See Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, Dec. 5, 1979, 1363 U.N.T.S. 22.

¹⁰⁴ Jonathan Sydney Koch, *Institutional Framework for the Province of all Mankind: Lessons from the International Seabed Authority for the Governance of Commercial Space Mining*, 16 Int. J. Space Pol. & Pol’y 1 (2018).

¹⁰⁵ Moon Treaty, *supra* note 103, Art. 4.

States Parties shall inform the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, of their activities concerned with the exploration and use of the moon. Information on the time, purposes, locations, orbital parameters and duration shall be given in respect of each mission to the moon as soon as possible after launching, while information on the results of each mission, including scientific results, shall be furnished upon completion of the mission. In the case of a mission lasting more than sixty days, information on conduct of the mission, including any scientific results, shall be given periodically, at thirty-day intervals. For missions lasting more than six months, only significant additions to such information need be reported thereafter.

The United States, the Soviet Union, and the People's Republic of China saw this as a threat to their autonomy in space. The late 1970s saw a renewal of Cold War hostilities, replacing the period of détente during which the belligerents signed the OST.¹⁰⁶ The powers, currently conducting independent astral operations, had no desire to suddenly report to the United Nations. While the Moon Treaty provides a framework for peace and cooperation, it is not difficult to see why the major spacefaring nations saw it as an overreach. This represents a major issue with the Moon Treaty. It is an attempt to realize the lofty ambition of the OST, creating institutions and procedures for an internationalized space. Unfortunately, it came at precisely the wrong time.

The 1979 Soviet invasion of Afghanistan, and the rise of the Reagan and Thatcher administrations in the United States and the United Kingdom respectively, spelled an end to the era of feasible celestial cooperation.¹⁰⁷ These developments marked a rapid acceleration of extraplanetary armament. Reagan's Strategic Defense Initiative contained such a heavy focus on orbital defense that it became known as "Star Wars," essentially signaling the end of the peaceful OST era of international space policy.¹⁰⁸ In the runup to this new arms race, the Moon Treaty simply asked The United States, the Soviet Union, and the People's Republic of China to give over too much power to the United Nations. Article 11 proved the undoing of the Moon Treaty,

1. The moon and its natural resources are the common heritage of mankind . . .
2. The moon is not subject to national appropriation by any claim of sovereignty, by means of use or occupation, or by any other means.

¹⁰⁶ See Robert Zich & Kathryn D. Ellis, *Revelations from the Russian Archives*, THE LIBRARY OF CONGRESS (Jun. 1993), <https://www.loc.gov/exhibits/archives/sovi.html>.

¹⁰⁷ See *The Cold War (1945–1989)*, CVCE (Jul. 7, 2016), https://www.cvce.eu/content/publication/2011/11/21/6dfe06ed-4790-48a4-8968-855e90593185/publishable_en.pdf.

¹⁰⁸ See *id.*

3. Neither the surface nor the subsurface of the moon, nor any part thereof or natural resources in place, shall become property of any State, international intergovernmental or non-governmental organization, national organization or non-governmental entity or of any natural person . . .

5. States Parties to this Agreement hereby undertake to establish an international regime, including appropriate procedures, to govern the exploitation of the natural resources of the moon as such exploitation is about to become feasible . . .

6. In order to facilitate the establishment of the international regime referred to in paragraph 5 of this article, States Parties shall inform the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, of any natural resources they may discover on the moon.¹⁰⁹

The “Common Heritage of mankind” language has proved an enduring issue in international space law. Subsection 5, calling for the establishment of an international regime to cooperatively exploit celestial resources, was anathema to the individualistic and hyper-capitalist American ethos of the dawning new era.¹¹⁰ The Moon Treaty was an attempt to effectuate the earlier OST, create institutions and procedures to realize a halcyon international order that no longer appeared possible. It was simply too far for the early 1980s. No power repudiated its commitment to the OST, but very few were willing to sign onto a document that may have made it a reality. At present, no nation participating in self-launched human spaceflight has ratified the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies. It has little actual effect in international law.¹¹¹

PRIVATIZATION AND THE 2015 SPACE ACT

The 1980s marked a halt in the development of recognized international space law. The United States and Soviet Union increased their abilities to wage war in space, but the celestial showdown became a moot point when the USSR collapsed in 1991. America subsequently focused on internal issues and its War on Terror, to the detriment of manned space exploration.¹¹² International cooperation in the realm of space law has also all but ceased. Functionally, international Space Law has remained the same since 1967.¹¹³

¹⁰⁹ Moon Treaty, *supra* note 103, Art. 11.

¹¹⁰ Mark Green, *Reagan's Cowboy Capitalism*, THE NATION (Jun. 7, 2004), <https://www.thenation.com/article/archive/reagans-cowboy-capitalism/>.

¹¹¹ See Moon Treaty, *supra* note 103, Art. 15.

¹¹² See *Why did we stop going to the Moon?*, ROYAL MUSEUMS GREENWICH, <https://www.rmg.co.uk/stories/topics/why-did-we-stop-going-moon>.

¹¹³ See Michelle L.D. Hanlon and Greg Autry, *Space law hasn't been changed since 1967 – but the UN aims to update laws and keep space peaceful*, THE CONVERSATION (Nov.

Governmental space exploration, freed from a need to arm but incapable of extracting resources, focused on mainly scientific pursuits.¹¹⁴ Into this post-Cold War vacuum stepped billionaire magnates and private corporations. A series of American statutes facilitated their entry. The 1984 Commercial Space Launch Act reads in part,

In carrying out this chapter, the Secretary shall—

- (1) encourage, facilitate, and promote commercial space launches and reentries by the private sector, including those involving space flight participants; and
- (2) take actions to facilitate private sector involvement in commercial space transportation activity, and to promote public-private partnerships involving the United States Government, State governments, and the private sector to build, expand, modernize, or operate a space launch and reentry infrastructure.¹¹⁵

This provided an initial framework for the commercialization of near-earth orbit, especially in the realm of satellites. This proved majorly beneficial for companies launching satellites into space, as did further legislation in 1998, 2000, and 2004.¹¹⁶ True to the legacy that ended the era of international space law envisioned by the OST, America encouraged its corporations to take advantage of the final frontier. However, until relatively recently, private corporations could not rival the launch technology wielded by governments. Elon Musk founded Space X in 2002, and the company celebrated its first launch in 2008.¹¹⁷ SpaceX and its Falcon 1 rocket signaled a new era in the privatization of space. Musk and his peers thought beyond the orbital communications platforms governed by the legislation of the early 2000s. Musk founded SpaceX to colonize Mars.¹¹⁸ He was not alone in this ambition, as by 2013, Amazon founder Jeffrey Bezos and nearly a dozen other billionaires staked claims in the private spaceflight industry.¹¹⁹

International law had not kept pace with the hand-in-hand march of

23, 2021, 8:31 AM), <https://theconversation.com/space-law-hasnt-been-changed-since-1967-but-the-un-aims-to-update-laws-and-keep-space-peaceful-171351>.

¹¹⁴ See Linda Herridge, *2000's: Challenging Goals Reached*, NASA (Jun. 29, 2012), <https://www.nasa.gov/centers/kennedy/about/history/timeline/2000s-decade.html>.

¹¹⁵ Commercial Space Launch Activities, 51 U.S.C. § 50903.

¹¹⁶ See *U.S. Space Law*, SPACE FOUNDATION, https://www.spacefoundation.org/space_brief/us-space-law/.

¹¹⁷ See Nellie English, *The History of SpaceX*, UNDER LUCKY STARS (Jun. 16, 2020), <https://www.underluckystars.com/blog/the-history-of-spacex/>.

¹¹⁸ See *id.*

¹¹⁹ See Eric Berger, *Ten billionaires are betting on private spaceflight: Smart or squandered money?*, CHRON. (Jun. 28, 2013, 10:29 AM), <https://blog.chron.com/sciguy/2013/06/ten-billionaires-are-betting-on-private-space-flight-smart-or-squandered-money/>.

industry and technology. The prior legal framework envisioned private corporations as following the lead of national space agencies. It did not contemplate a scenario in which private actors themselves stepped boldly into the unknown, in many cases ahead of the likes of NASA. This development created the need for a new paradigm, one that recognized the capabilities and goals of the corporations. In 2015, Congress passed the U.S. Commercial Space Launch Competitiveness Act. This legislation signaled a recognition of the ambitions of the billionaires and private interests. The Act states,

It is the sense of Congress that eliminating duplicative requirements and approvals for commercial launch and reentry operations will promote and encourage the development of the commercial space sector.¹²⁰

This language indicates congressional support for the current commercial trend in spaceflight. It conveys an intent to decouple regulations on government launches and those surrounding private missions. This includes an alignment of American spacefaring goals with those of SpaceX and Bezos' Blue origin. The legislation updates policy to include the use of the U.S. Space Launch System, an unfinished delivery vehicle that will be the most powerful rocket ever built by NASA:¹²¹

The Space Launch System may be used for the following circumstances:

- (1) Payloads and missions that contribute to extending human presence beyond low-Earth orbit and substantially benefit from the unique capabilities of the Space Launch System.
- (2) Other payloads and missions that substantially benefit from the unique capabilities of the Space Launch System.
- (3) On a space available basis, Federal Government or educational payloads that are consistent with NASA's mission for exploration beyond low-Earth orbit.¹²²

"Extending human presence beyond low-Earth orbit" technically contemplates the vast majority of the universe, but in this case, it means the moon, Mars, and the asteroid belts of this solar system. NASA intends to use the Space Launch System to send the first manned missions to Mars.¹²³ In doing so, it enters a new space race. Ironically, this race will not be against the forces of Communism, but instead against manifestations of the independent Capitalism America adopted in opposition to the Soviet Union. In a sense, the 2015 Commercial Space Launch Competitiveness Act is comparable to the

¹²⁰ U.S. Commercial Space Launch Competitiveness Act, 51 U.S.C. § 50918.

¹²¹ See *Space Launch System*, NASA (Jan. 21, 2022), <https://www.nasa.gov/exploration/systems/sls/index.html>.

¹²² 51 U.S.C. § 70102.

¹²³ See Chris Gebhardt, *NASA Finally Sets Goals, Missions for SLS – Eyes Multi-step Plan to Mars*, NASASPACEFLIGHT.COM (Apr. 6, 2017), <https://www.nasaspaceflight.com/2017/04/nasa-goals-missions-sls-eyes-multi-step-mars/>.

1967 Outer Space Treaty, in that it creates a framework for cooperation among competitors.

While an alignment of goals is important, the main contribution of the Commercial Space Launch Competitiveness Act is its approval of private resource extraction. It reads:

The President, acting through appropriate Federal agencies, shall—

- (1) facilitate commercial exploration for and commercial recovery of space resources by United States citizens;
- (2) discourage government barriers to the development in the United States of economically viable, safe, and stable industries for commercial exploration for and commercial recovery of space resources in manners consistent with the international obligations of the United States; and
- (3) promote the right of United States citizens to engage in commercial exploration for and commercial recovery of space resources free from harmful interference, in accordance with the international obligations of the United States and subject to authorization and continuing supervision by the Federal Government.¹²⁴

These provisions delegate authority to the president and the executive branch, prioritizing the rapid implementation of their content. The language on “space resources” especially defines the act and the legislative intent of the congress that passed it: The United States is in favor of the extraction of wealth from beyond Earth, by and for corporations. The second subsection supports this, calling for the fall of administrative barriers. This was a major issue before the passage of the Commercial Space Launch Competitiveness Act. Before this legislation, the Federal Aviation Administration fervently claimed authority over commercial space launches.¹²⁵ By 2015, the FAA already controlled launch and landing licenses for space vehicles but had no authority over what happened in orbit.¹²⁶ The SPACE act attempts to correct this regulatory gap, mandating that federal agency heads in transportation, space, and commerce:

- (1) assess current, and proposed near-term, commercial non-governmental activities conducted in space;
- (2) identify appropriate authorization and supervision authorities for the activities described in paragraph (1);
- (3) recommend an authorization and supervision approach that would prioritize safety, utilize existing authorities, minimize burdens to the industry, promote the U.S. commercial space sector, and meet the

¹²⁴ 51 U.S.C. § 51302.

¹²⁵ See Joe Pappalardo, *3 Ways Red Tape Could Ground Private Space*, POPULAR MECHS. (Feb. 5, 2014), <https://www.popularmechanics.com/space/a10151/3-ways-red-tape-could-ground-private-space-16460842/>.

¹²⁶ See *id.*

United States obligations under international treaties.¹²⁷

This declines to create a new federal agency, but it does task current administrators with fitting a more business-friendly policy into existing regulatory frameworks. This could not come too soon, as commercial space operators had also become frustrated with the FAA Office of Commercial Space Transportation's licensing requirements. Richard Branson of Virgin Galactic experienced such a barrier to space tourism before the passage of this legislation:

to make money from paying customers, Virgin Galactic must obtain an FAA commercial operator's license. Here's the catch: The company can't make changes to the design of the craft once it gets that commercial license and starts flying customers.¹²⁸

The Commercial Space Launch and Competitiveness Act is an acknowledgment of these difficulties. It tasks federal administrators with identifying and removing the red tape leftover from an era in which commercial space launches were constrained to science fiction.

The SPACE Act explicitly contemplates asteroid mining, as Congress recognized the need for clarification of title. International laws like the OST create ambiguity as to whether private individuals and corporations can own resources in what is "the province of all mankind."¹²⁹ The common law doctrine of *pedis possessio* dictates that the first to step foot on unclaimed property is its owner.¹³⁰ However, speculation on the ambiguous nature of an international treaty is insufficiently clear to be relied upon by for-profit entities. Therefore, the SPACE Act aimed to clarify ownership of space resources:

A United States citizen engaged in commercial recovery of an asteroid resource or a space resource under this chapter shall be entitled to any asteroid resource or space resource obtained, including to possess, own, transport, use, and sell the asteroid resource or space resource obtained in accordance with applicable law, including the international obligations of the United States.¹³¹

An "asteroid resource" is defined as "a space resource found on or within a single asteroid."¹³² A "space resource" is "an abiotic resource in situ in outer

¹²⁷ U.S. Commercial Space Launch Competitiveness Act, Pub. L. No. 114-90, 129 Stat. 704, 707-708 (2015).

¹²⁸ Pappalardo, *supra* note 125.

¹²⁹ See Craig Foster, *Excuse Me, You're Mining My Asteroid: Space Property Rights and the U.S. Space Resource Exploration and Utilization Act of 2015*, 2016 U. ILL. J. OF L., TECH, POL. 407, 416-417 (2016).

¹³⁰ *See id.*

¹³¹ 51 U.S.C. § 51303.

¹³² *Id.* at §51301

space.”¹³³ Interestingly, because Congress included the term “abiotic,” private corporations cannot claim ownership if they discover that humankind is not alone in the Universe.¹³⁴ The language of this section firmly moves away from the paradigm that American corporate activity in space must fully comply with international law. It also circumvents contrary provisions of the Outer Space Treaty. By claiming that the extraction of extraplanetary resources *can* comply with “the international obligations of the United States,” Congress asserts that the OST does not make such activity illegal. Certain readings of the OST render it and the Commercial Space Launch and Competitiveness Act incompatible, leading some to claim that Congress broke international law by passing the legislation.¹³⁵ The OST’s non-appropriation principle prohibits national actors from claiming sovereignty over objects and bodies in outer space.¹³⁶ Criticism of the SPACE Act stems from the doctrine that “Sovereign recognition of ownership is essential to private ownership of something in outer space. Private ownership of something cannot exist without first being granted by a sovereign.”¹³⁷ Congress attempts to counter such a reading with the disclaimer:

It is the sense of Congress that by the enactment of this Act, the United States does not thereby assert sovereignty or sovereign or exclusive rights or jurisdiction over, or the ownership of, any celestial body.¹³⁸

The OST explicitly contemplates “activities . . . carried on by . . . non-governmental entities” in its original text, indicating approval.¹³⁹ Furthermore, bodies such as the International Institute of Space Law have opined that “private activities on the Moon and other celestial bodies are permitted.”¹⁴⁰ Finally, the SPACE Act does not explicitly fall outside the purview of the OST. Broad readings of the treaty’s non-appropriation principle seem to preclude private ownership of space resources.¹⁴¹ However, other scholars prefer a narrow reading, one that simply forbids actual claims of sovereignty by

¹³³ *Id.*

¹³⁴ See K.G Orphanides, *American Companies Could Soon Mine Asteroids for Profit*, WIRED (Dec. 11, 2015), <https://www.wired.co.uk/article/how-to-mine-asteroids-for-fun-and-profit>.

¹³⁵ Kurt Taylor, *Fictions of the Final Frontier: Why the United States SPACE Act of 2015 is Illegal*, 33 EMORY INT’L L. REV. 653, 656-57 (2019).

¹³⁶ Outer Space Treaty, *supra* note 88, at Art. II.

¹³⁷ Taylor, *supra* note 135.

¹³⁸ U.S. Commercial Space Launch Competitiveness Act, Pub. L. No. 114-90, 129 Stat. 704, 722 (2015).

¹³⁹ Outer Space Treaty, *supra* note 88, at Art VI.

¹⁴⁰ See *Statement by the Board of Directors of the International Institute of Space Law (IISL) on Claims to Property Rights Regarding the Moon and Other Celestial Bodies*, INT’L INST. OF SPACE L. (2004), <https://iislweb.space/statement-by-the-iisl-board-of-directors-on-claims-to-property-rights-regarding-the-moon-and-other-celestial-bodies/>.

¹⁴¹ Taylor, *supra* note 135, at 657.

national governments.¹⁴² This reading is supported by precedent. In 1993, lunar particles extracted by a Soviet mission were sold at auction for more than \$400,000.¹⁴³ This debate over the non-appropriation principle is vigorous and fascinating. However, it is probably purely theoretical. The United Nations does not have the authority or the ability to enforce a broad interpretation.¹⁴⁴ The United States is not alone in deciding that the OST allows private corporations to extract resources in space. Japan, Luxembourg, and The United Arab Emirates have all passed laws to the same effect as the SPACE Act.¹⁴⁵ Clearly, individual countries and industries refuse to wait for international law to clarify a stance on private resource extraction in space. The U.S. Commercial Space Launch Competitiveness Act is at the vanguard of a new era of space law, one that trades speculative idealism for current opportunism. This new era understands the value of extraplanetary resources, but it must contemplate the risks lest it face disaster. Enter the United States Space Force.

SPACE FORCE

In December 2019, President Trump signed the National Defense Authorization Act for Fiscal Year 2020.¹⁴⁶ This legislation followed an increase in presidential rhetoric on the dangers posed to American interests in space.¹⁴⁷ The act officially made the United States Air Force Space Command into the U.S. Space Force (SF), the 8th branch of the United States military.¹⁴⁸ Owing to its youth, the SF is by far the smallest branch of the military.¹⁴⁹ While the SF may be operational as of 2021, much of its procurement, organizational structure, and administration have yet to be finalized.¹⁵⁰ As such, the SF is something of a “blank slate” in terms of planning for the future of humanity in space. When President Trump first began speaking of the American

¹⁴² See John G. Wrench, *Non-Appropriation, No Problem: The Outer Space Treaty Is Ready for Asteroid Mining*, 51 CASE WEST. RES. J. OF INT'L LAW 437, 439 (2019).

¹⁴³ See Foster, *supra* note 129, 419.

¹⁴⁴ See Michelle L.D. Hanlon & Greg Autry, *Space Law Has Been Changed Since 1967, but the UN Aims to Update and Maintain Peaceful Space*, CONVERSATION (Nov. 23, 2021), <https://theconversation.com/space-law-hasnt-been-changed-since-1967-but-the-un-aims-to-update-laws-and-keep-space-peaceful-171351>.

¹⁴⁵ Jeff Foust, *Japan Passes Space Resources Law*, SPACENEWS (Jun. 17, 2021), <https://spaceneews.com/japan-passes-space-resources-law/> [https://perma.cc/2BJP-GM47].

¹⁴⁶ Robert Farley, *Space Force: Ahead of Its Time, or Dreadfully Premature?*, CATO INSTITUTE (Dec. 1, 2020), <https://www.cato.org/policy-analysis/space-force-ahead-its-time-or-dreadfully-premature> [https://perma.cc/N679-XKZF].

¹⁴⁷ See *id.*

¹⁴⁸ See *id.* The space force is the first new service branch since the Air Force launched in 1947.

¹⁴⁹ See *id.*

¹⁵⁰ See *id.*

Armed Forces expanding into space, many saw this as an extension of the president's often belligerent attitude towards foreign policy.¹⁵¹ Space seemed like it might become a partisan issue. In a 2018 poll, 69% of Democrats disapproved of the effort to establish a new branch of the military in space, while 68% of Republicans supported the same proposal.¹⁵² Many saw the SF as the wasteful vanity project of a megalomaniacal demagogue.¹⁵³ The SF has taken steps to distance itself from the controversial former president. Its inaugural head, General John W. Raymond, has explicitly stated that the SF is "not a President Trump thing."¹⁵⁴ Early in his presidency, President Biden confirmed that he did not plan to dismantle the United States Space Force.¹⁵⁵ As it drifts away from an inauguration mired in partisan politics, the SF has a chance to decide what it is and what it wants to be. To do so, it must forge a path that responds to its critics.

Criticism initially focused on the SF as it pertained to President Trump. It pointed to his Space Policy Directives and claimed that establishing a military force in space was an inherently aggressive action.¹⁵⁶ This angle points to the OST's peaceful language and principles of nonaggression to claim the SF itself might be illegal.¹⁵⁷ However, even a strict reading of the OST, and an analysis of how courts apply international law, show that the SF

"does not violate any treaty the United States has signed, so long as the United States pays for all damages Space Force causes and rescues all spacecraft personnel."¹⁵⁸ If the U.S. does not use the SF in an offensive capacity, it is probably legal under current international law.¹⁵⁹ However, other critics

¹⁵¹ See Jeff Cirillo, *Space Force: Trump Drives New Partisan Split Over Old Issue*, ROLL CALL (Aug. 15, 2018), <https://rollcall.com/2018/08/15/space-force-trump-drives-new-partisan-split-over-old-issue/> [<https://perma.cc/WE29-RZVM>].

¹⁵² See *id.*

¹⁵³ See Dave Mosher, *Astronaut Mark Kelly says Trump's plan to create a Space Force 'is a dumb idea'*, BUSINESS INSIDER (Aug. 10, 2018), <https://www.businessinsider.com/trump-space-force-is-dumb-says-nasa-astronaut-2018-6> [<https://perma.cc/A35W-VP9T>].

¹⁵⁴ Mark Yarm, *The General of the Space Force Has Heard Your Jokes*, THE NEW YORKER (Nov. 22, 2021), <https://www.newyorker.com/magazine/2021/11/29/the-general-of-the-space-force-has-heard-your-jokes> [<https://perma.cc/6LPW-ESRL>].

¹⁵⁵ Valerie Insinna, *With Biden's 'full support,' the Space Force is officially here to stay*, DEFENSENEWS (Feb. 3, 2021), <https://www.defensenews.com/space/2021/02/03/with-the-full-support-of-the-biden-administration-the-space-force-is-officially-here-to-stay/> [<https://perma.cc/QCA2-Y3DW>].

¹⁵⁶ See Alexis Ramsey & Jessica Ramsey, *Space Force and the Outer Space Treaty: One Small Step Forward for a Man, One Giant Leap Backward for Humankind*, 54 U.S.F. L. REV. F. 4, 5 (2019-2020).

¹⁵⁷ See *id.*

¹⁵⁸ See *id.* at 17.

¹⁵⁹ See discussion *supra* notes 95-102 (discussing the legality of military operations in space).

are dubious that the U.S. will refrain from using an arm of its military in an offensive capacity. These critics see the Space Force as a response to Russia and China's creation of similar military institutions.¹⁶⁰ This tit for tat military maneuvering reminds some of Reagan-era "star wars"¹⁶¹ brinkmanship, sparking fears of a new cold war.¹⁶² A new arms race, probably involving orbital nuclear weapons, is certainly not a use for the SF permitted by international law. These critics also see the SF as a tool of American imperialism. Certain theories of statehood contend that generating violent conflict and fear is a necessary component of imperial dominion.¹⁶³ Critics of the SF point to defense briefings that highlight the *potential* offensive capabilities of Russian, Chinese, Iranian, and North Korean space operators.¹⁶⁴ These official military documents focus solely on what these countries *might* be able to do in the future if they are not stopped, lending a paranoid and belligerent bent to American military activity in space.¹⁶⁵ Critics argue that American leaders will use fear mongering to justify escalation and preemptive attacks, leading to a devastating war in the heavens.¹⁶⁶

These detractors to the U.S. SF present salient points. If the SF is perceived, and used, as a conventional military apparatus aimed at combat with other state militaries, it creates an unacceptable risk of a war with no winners. Luckily, the SF can have an alternate purpose: defending civilian and commercial interests from hostile non-state actors. Official channels have already framed the SF as an anti-piracy measure.¹⁶⁷ The statutorily defined duties of the SF are to:

- (1) protect the interests of the United States in space;
- (2) deter aggression in, from, and to space; and
- (3) conduct space operations.¹⁶⁸

"Interests" need not be imperialistic. "Operations" should not be offensive. To this end, the SF should not focus on hypothetical aggression from other

¹⁶⁰ See Ramsey & Ramsey, *supra* note 156, at 19.

¹⁶¹ See CVCE, *supra* note 108, at 22.

¹⁶² See generally Lauren Hauck, *The Rogue One: Trump's Space Force and the Threat of a New Cold War*, 42 U. HAW. L. REV. 119 (2020).

¹⁶³ See *id.* at 152; see also Amiya Kumar Bagchi, *Towards a Correct Reading of Lenin's Theory of Imperialism*,

18 ECON. & POL. WKLY. 2, 2 (1983).

¹⁶⁴ See generally DEF. INTELLIGENCE AGENCY, CHALLENGES TO SECURITY IN SPACE (Jan. 2019).

¹⁶⁵ See Hauck, *supra* note 162, at 152-53.

¹⁶⁶ See generally Hauck, *supra* note 162.

¹⁶⁷ See Owen Daugherty, *Cruz warns 'Space Force' needed to prevent space pirates*, THE HILL (May 15, 2019), <https://thehill.com/homenews/senate/443923-ted-cruz-says-space-force-is-necessary-to-prevent-space-pirates> [<https://perma.cc/RU5S-PB69>].

¹⁶⁸ National Defense Authorization Act, 10 U.S.C. § 9081.

states and their spaceborne militaries. It should instead focus its efforts on non-state actors so as to defend commercial and civilian space activities. In this way, the United States Space Force can be a force for peace, rather than a catalyst for war.

CONCLUSION

While space exploration promises dazzling commercial and scientific opportunities, it also presents terrifying threats. International law is currently ill-equipped to respond to either of these. While countries have passed laws to facilitate the seizure of commercial opportunities, their response to spaceborne threats is mired in a dangerous suspicion of one another. This is reflected in the creation of celestial military bodies in the United States, China, and Russia. These bodies, such as the United States Space Force, might be a dangerous step towards a new Cold War. However, spaceborne militaries need not incite global conflict. They can instead be used to protect business, science, and even civilian tourism from commercially or ideologically motivated non-state actors. Adopting this alternate course, coupled with the eventual passage of an “Outer Space Criminal Statute” (with a focus on piracy and cybercrime), can make the United States and its Space Force leaders in a peaceful human dispersal among the stars. The stakes are too high to choose otherwise.

NOTE

A FACE WITHOUT A NAME:

FINDING A PRACTICAL CONSTRUCTION OF BIPA’S “SCAN OF . . . FACE GEOMETRY”

Carson Martinez

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INTRODUCTION

The global facial analysis market size was estimated to be \$3.86 billion in 2020 and is expected to reach \$12.11 billion by 2028.¹ Companies today are

¹ Grand View Research, *Facial Recognition Market Size, Share & Trends Analysis Report By Technology (2D, 3D, Facial Analytics), By Application (Access Control, Security*

deploying facial analysis technologies in a wide range of contexts, from preventing fraud to personalized marketing.² Even government entities have begun rolling out the technology.³ As the technology becomes more sophisticated and widespread, the importance of its regulation has also grown. The first regulation of facial analysis technologies was the Illinois' Biometric Information Privacy Act of 2008 (BIPA).⁴ BIPA regulates the collection, use, and storage of biometric information by private entities. Arguably enacted ahead of its time, the law only gained true force in 2017— from its enactment in 2008 through 2016, only 15 BIPA class actions were filed in Illinois State Court, but from 2017 through 2020, over 513 cases were filed.⁵ Plaintiffs are now suing more and more companies for alleged BIPA violations in record numbers: it is estimated that in 2021 at least 74 published court rulings referenced BIPA, outpacing the 62 rulings published in 2020.⁶

Under BIPA, private entities generally are required to (1) provide notice to the individual that biometric information is being collected; (2) inform the individual in writing about the purpose for collecting the information and

& Surveillance), By End-use, By Region, And Segment Forecasts, 2021 – 2028 (May 2021), <https://www.grandviewresearch.com/industry-analysis/facial-recognition-market> [<https://perma.cc/S323-FP6E>].

² U.S. GOV'T ACCOUNTABILITY OFF., GAO-20-522, FACIAL RECOGNITION TECHNOLOGY: PRIVACY AND ACCURACY ISSUES RELATED TO COMMERCIAL USES 11-12 (2020), <https://www.gao.gov/assets/gao-20-522.pdf>.

³ See e.g. Catie Edmondson, *ICE Used Facial Recognition to Mine State Driver's License Databases*, N.Y. TIMES (July 7, 2019), <https://www.nytimes.com/2019/07/07/us/politics/ice-drivers-licenses-facial-recognition.html> [<https://perma.cc/NW5T-SD83>]; Drew Harwell, *ACLU Sues FBI, DOJ Over Facial-Recognition Technology, Criticizing 'Unprecedented' Surveillance and Secrecy*, WASH. POST (Oct. 31, 2019, 11:04 AM), <https://www.washingtonpost.com/technology/2019/10/31/aclu-sues-fbi-doj-over-facial-recognition-technology-criticizing-unprecedented-surveillance-secrecy/> [<https://perma.cc/J699-2CDQ>]; Brian Naylor, *The IRS Is Allowing Taxpayers to Opt Out of Facial Recognition to Verify Accounts*, NPR (Feb. 22, 2022, 2:13 PM), <https://www.npr.org/2022/02/22/1082283039/the-irs-is-allowing-taxpayers-to-opt-out-of-facial-recognition-to-verify-account> [<https://perma.cc/3THJ-Q5ME>].

⁴ Illinois Biometric Information Privacy Act (BIPA), 740 ILL. COMP. STAT. ANN. 14 (2008); *The Evolution of Biometric Data Privacy Laws*, BLOOMBERG LAW (Jan. 25, 2003), <https://pro.bloomberglaw.com/brief/biometric-data-privacy-laws-and-lawsuits/> [<https://perma.cc/YVF3-F53A>].

⁵ *ILR Briefly: A Bad Match: Illinois and the Biometric Information Privacy Act*, U.S. CHAMBER INST. FOR LEGAL REFORM (Oct. 2021), <https://institutelegalreform.com/wp-content/uploads/2021/10/ILR-BIPA-Briefly-FINAL.pdf>.

⁶ See Tiffany Cheung, Camille Framroze, & Ernesto Rojas Guzman, *Privacy Litigation 2021 Year in Review: Biometric Information Privacy Act (BIPA)*, MORRISON & FOERSTER (Jan. 11, 2022), <https://www.mofo.com/resources/insights/220107-biometric-information-privacy-act.html#:~:text=In%202021%2C%20at%20least%2074,the%2062%20rulings%20in%202020> [<https://perma.cc/8MVR-ZRRH>].

the length of time the data will be stored; (3) receive written consent from the individual for the collection and storage of the data; and (4) refrain from selling, leasing, trading, or otherwise profiting from the information, among other requirements.⁷ Importantly, BIPA contains a private right of action for individuals if the company negligently, recklessly, or intentionally violates BIPA.⁸ Because of this recovery scheme, it is estimated that more than 750 class action lawsuits have been filed since its enactment.⁹

BIPA defines “biometric information” as information based on “biometric identifiers,” which includes a “retina or iris scan, fingerprint, voiceprint, or scan of hand or face geometry.”¹⁰ However, the scope and meaning of the definition of a “scan of . . . face geometry” remains ambiguous. The term is not defined in the statute, and courts have yet to directly address what qualifies as a “scan of . . . face geometry.” To date, it is unclear whether BIPA applies broadly to include any analysis performed on a face, even when it is not intended to identify the person in the image or video (i.e., encompassing facial detection, characterization, authentication, and identification), only applies narrowly when a scan of a person’s face geometry is for identification purposes (i.e., only facial authentication and identification), or something in between. How a “scan of . . . face geometry” is eventually construed will have a great impact on the facial analysis community. Ongoing class action lawsuits in Illinois have suggested that the court may be leaning towards the broadest construction, which could open the floodgates of litigation wider than it already is.

Part II of this Note introduces biometric information and the range of facial analysis technologies employed today, along with the privacy risks that come with each of those technologies.¹¹ Part III details caselaw development

⁷ Biometric Information Privacy Act, 14/15.

⁸ *Id.* at 14/20.

⁹ Molly DiRago, *The Litigation Landscape of Illinois’ Biometric Information Privacy Act*, AMERICAN BAR ASS’N (Aug. 20, 2021), https://www.americanbar.org/groups/tort_trial_insurance_practice/committees/cyber-data-privacy/the-litigation-landscape/ [<https://perma.cc/X5KP-2JVU>].

¹⁰ Biometric Information Privacy Act, 14/10.

¹¹ This note does not discuss the important accuracy challenges that many facial analysis technologies create and its ramifications for certain demographic groups, potentially leading to human rights abuses and other harms. For a more detailed discussion on these problems, See Joy Buolamwini & Timnit Gebru, *Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification*, 81 PROC. ON MACH. LEARNING RES.: CONF. OF FAIRNESS, ACCOUNTABILITY, AND TRANSPARENCY 1 (Feb. 2018); Inioluwa Raji & Joy Buolamwini, *Actionable Auditing: Investigating the Impact of Publicly Naming Biased Performance Results of Commercial AI Products*, 2018 CONF. ON ARTIFICIAL INTELLIGENCE, ETHICS, AND SOC’Y; Joy Buolamwini, *When the Robot Doesn’t See Dark Skin*, N.Y. TIMES (June 21, 2018), <https://www.nytimes.com/2018/06/21/opinion/facial-analysis-technology-bias.html> [<https://perma.cc/4XKM-T8NV>]; Os Keyes, *The Misgendering Machines: Trans/HCI Implications of Automatic Gender Recognition*, 2 PROC. OF THE ACM ON

in Illinois and identifies how defendant companies are arguing for narrower constructions. Part IV analyzes how other jurisdictions treat biometric information and facial analysis tools. Finally, Part V outlines current challenges in construing BIPA's definition of "scan of. . . face geometry" too broadly or too narrowly and argues that the term should be more practically defined to encompass only information derived from facial analysis which could be used to identify an individual, balancing important research and technological interests with consumer privacy protections.

BIOMETRIC DATA AND THE RANGE OF FACIAL ANALYSIS TECHNIQUES

While there is no universally accepted definition of biometrics or biometric identifiers, the term generally "refers either to measurable human biological and behavioral characteristics that can be used for identification, or the automated methods of recognizing an individual based on those characteristics."¹² Biometric information is the data derived from biometric identifiers.¹³ BIPA itself defines biometric information as "any information, regardless of how it is captured, converted, stored, or shared, based on an individual's biometric identifier used to identify an individual."¹⁴ Biometric identifier under BIPA is defined as "a retina or iris scan, fingerprint, voiceprint, or scan of hand or face geometry."¹⁵ Biometric information can be either biological (relating to the specific measurements of an individual's physiological or anatomical dimensions and characteristics) or behavioral (relating to specific measurements of an individual's activity patterns).¹⁶ Examples of biological biometric information include genetic and genomic information, fingerprints, iris and retina scans, facial characteristics, voice characteristics, and hand characteristics. Examples of behavioral biometric information include gait, handwriting style, and typing speed.

An entity may be liable under BIPA if it collects or captures an individual's biometric identifier or biometric information.¹⁷ Interestingly, because BIPA

HUMAN-COMPUTER INTERACTION 1 (2019).

¹² See Michael P. Daly, Kathryn E. Deal, Seamus C. Duffy, Matthew J. Fedor, Michael W. McTigue Jr., & Meredith C. Slawe, *Biometrics Litigation: An Evolving Landscape*, PRAC. L. LITIG. (Apr. 2, 2018), <https://us.practicallaw.thomsonreuters.com/w-001-8264>; see also *Biometrics*, U.S. DEP'T HOMELAND SEC. (Feb. 6, 2017), <https://www.dhs.gov/biometrics> [<https://perma.cc/ZS67-SN52>](defining biometrics as unique physical characteristics, such as fingerprints, that can be used for automated recognition).

¹³ Michael P. Daly et al., *supra* note 12.

¹⁴ Biometric Information Privacy Act, 14/10.

¹⁵ *Id.*

¹⁶ *Biometric Data Privacy in the Digital Age*, POTOMAC INST. FOR POL'Y STUDS. (Jan. 2020), https://potomacinstitute.org/images/studies/Biometric_Data_Privacy_2020.pdf [hereinafter POTOMAC INST. FOR POL'Y STUDS.]; *Biometrics*, U.S. DEP'T HOMELAND SECURITY (Feb. 6, 2017), <https://www.dhs.gov/biometrics>.

¹⁷ Biometric Information Privacy Act, 14/15.

excludes photographs from the list of biometric identifiers,¹⁸ information derived from photographs does not constitute biometric information under BIPA.¹⁹ However, biometric identifiers (i.e., scans of face geometry) may derive from photographs and still be subject to BIPA.²⁰

Biometric information is a highly sensitive type of information because it is unique to each individual and nearly immutable.²¹ BIPA recognizes that “[b]iometrics are unlike other unique identifiers that are used to access finances or other sensitive information. For example, social security numbers, when compromised, can be changed. Biometrics, however, are biologically unique to the individual; therefore, once compromised, the individual has no recourse”²² Biometric information also may reveal other sensitive information beyond the scope of its identification potential, including information regarding an individual’s gender, race, age, ethnicity, mood, and health, such as physiological or pathological conditions.²³ For example, voice recordings

¹⁸ *Id.* at 10/15. BIPA excludes the following from its definition of biometric identifier: [W]riting samples, written signatures, photographs, human biological samples used for valid scientific testing or screening, demographic data, tattoo descriptions, or physical descriptions such as height, weight, hair color, or eye color. Biometric identifiers do not include donated organs, tissues, or parts as defined in the Illinois Anatomical Gift Act or blood or serum stored on behalf of recipients or potential recipients of living or cadaveric transplants and obtained or stored by a federally designated organ procurement agency. Biometric identifiers do not include biological materials regulated under the Genetic Information Privacy Act. Biometric identifiers do not include information captured from a patient in a health care setting or information collected, used, or stored for health care treatment, payment, or operations under the federal Health Insurance Portability and Accountability Act of 1996. Biometric identifiers do not include an X-ray, roentgen process, computed tomography, MRI, PET scan, mammography, or other image or film of the human anatomy used to diagnose, prognose, or treat an illness or other medical condition or to further validate scientific testing or screening.

Id.

¹⁹ *Id.* (“Biometric information does not include information derived from items or procedures excluded under the definition of biometric identifiers”); *see also* *Monroy v. Shutterfly, Inc.*, No. 16 C 10984, 2017 WL 4099846, at *3 (N.D. Ill. Sept. 15, 2017) (“[T]he data extracted from [the plaintiff’s] photograph cannot constitute ‘biometric information’ within the meaning of [BIPA].”); *Vance v. Microsoft Corp.*, 525 F. Supp. 3d 1287, 1296 (W.D. Wash. 2021) (“And while these facial scans [of photographs] may not qualify as biometric information—because they are ‘derived from items . . . excluded under the definition of biometric identifiers,’ namely, photographs—there is no textual support for the contention that these scans could not be biometric identifiers themselves.”).

²⁰ *See Sosa v. Onfido, Inc.*, 600 F. Supp. 3d 859 (N.D. Ill. 2022) (holding that unique numerical representations based on a person’s facial geometry, which was derived from a photograph, constitutes a biometric identifier and thus subject to BIPA even though those representation do not constitute biometric information under BIPA).

²¹ POTOMAC INST. FOR POL’Y STUDS., *supra* note 16, at 5.

²² Biometric Information Privacy Act, 14/5.

²³ Potomac Inst. for Pol’y Studs., *supra* note 16, at 9.

can reveal neurological disorders, such as Parkinson's Disease,²⁴ and typing patterns can reveal mood disorders, such as depression.²⁵ Biometric information's potential to disclose further personal information—in addition to its near-permanence and identification ability—make it extremely valuable information, requiring heightened protections.

One of the fastest growing, and also arguably most troublesome, biometric technology is facial analysis technology.²⁶ Facial analysis technology's expanded and advanced use is due in part to the increased availability of photos online.²⁷ While other biometrics, such as fingerprints, voiceprints, iris scans, and scans of hand geometry all bring their own concerns as well, photographs and videos are used more commonly, especially for identification, bringing more severe implications.²⁸ The term "facial analysis" is used broadly to refer to any technology that extracts data from facial images or videos.²⁹ However,

²⁴ Evaldas Vaiciukynas, Antanas Verikas, Adas Gelzinis, & Marija Bacauskiene, *Detecting Parkinson's Disease from Sustained Phonation and Speech Signals*, 12 PLOS ONE 10:e0185613 (Oct. 5, 2017), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5628839/> [<https://perma.cc/4Q5R-RF8T>].

²⁵ Rafail-Evangelos Mastoras, Dimitrios Iakovakis, Stelios Hadjidimitriou, Vasileios Charisis,

Seada Kassie, Taoufik Alsaadi, Ahsan Khandoker, & Leontios J. Hadjileontiadis, *Touchscreen Typing Pattern Analysis for Remote Detection of the Depressive Tendency*, 9 SCI. REP. 13414 (2019), <https://www.nature.com/articles/s41598-019-50002-9> [<https://perma.cc/E999-8ZW9>].

²⁶ Martin Zizi, *How Facial Recognition Needs to Improve to be Effective*, FORBES (Oct. 4, 2019, 7:15 AM), <https://www.forbes.com/sites/forbestechcouncil/2019/10/04/how-facial-recognition-needs-to-improve-to-be-effective/?sh=3bc360982cdf> [<https://perma.cc/UQX6-3KHE>].

²⁷ Cade Metz, *Facial Recognition Tech Is Growing Stronger, Thanks to Your Face*, N.Y. TIMES (July 13, 2019), <https://www.nytimes.com/2019/07/13/technology/databases-faces-facial-recognition-technology.html> [<https://perma.cc/9P49-9DKZ>].

²⁸ Lindsey Barrett, *Ban Facial Recognition Technologies for Children—And For Everyone Else*, 26 B.U. J. SCI. & TECH. L. 223, 241 ("Photographs are used far more widely for identification, allowing the creation of databases from photographs collected for different purposes. As one example, no one is posting pictures of their palm prints on Facebook—they're posting pictures of their faces.")

²⁹ Other organizations and scholars utilize the term "facial recognition" to encompass all types of facial analysis techniques. The term used this way, however, is a misnomer: not all facial analysis techniques are used for or have the capacity to perform recognition. Thus, this note refers to the range of technologies that process face-related data as "facial analysis technology" instead of "facial recognition technology." See e.g., Barbican Centre, *Joy Buolamwini: Examining Racial and Gender Bias in facial analysis software*, GOOGLE ARTS & CULTURE <https://artsandculture.google.com/story/joy-buolamwini-examining-racial-and-gender-bias-in-facial-analysis-software-barbican-centre/BQW-BaNKAVWQPJg?hl=en> [<https://perma.cc/7H79-CZVF>]. But see FED. TRADE COMM'N, *FACING FACTS: BEST PRACTICES FOR COMMON USES OF FACIAL RECOGNITION TECHNOLOGIES* 1 n. 2 (Oct. 2021), <https://www.ftc.gov/sites/default/files/documents/reports/facing-facts->

the types of techniques which are included under its umbrella—i.e., facial identification, facial authentication, facial characterization, and facial detection—differ in methodology and privacy implications.³⁰

Facial Detection

Facial detection determines whether an image or video contains a face.³¹ Facial detection may be used as part of a facial characterization, authentication, and identification system, or it may be used as a standalone technology.³² With standalone facial detection, a facial template is typically not created nor derived, although a facial template could be generated.³³ An example of this technology's application is determining the number of shoppers that walk into your store by counting faces. This can help companies understand customer flows to identify peak shopping times.

Facial Characterization

Facial characterization identifies attributes such as demographic, gender, age, emotion, and other characteristics from detected faces.³⁴ This technique begins with facial detection to determine the presence of a face and then goes on to analyze, interpret, and categorize the physical appearance of facial features, like gender or the presence of glasses or freckles.³⁵ This analysis does

best-practices-common-uses-facial-recognition-technologies/121022facialechrpt.pdf; Erik Learned-Miller, Vicente Ordóñez, Jamie Morgenstern, & Joy Buolamwini, FACIAL RECOGNITION TECHNOLOGIES IN THE WILD: A CALL FOR A FEDERAL OFFICE 3 n.1 (2020) (“Borrowing from the Federal Trade Commission [1], we use the term ‘facial recognition technologies’ as a catchall phrase to describe a set of technologies that process imaging data to perform a range of tasks on human faces, including detecting a face, identifying a unique individual, and estimating demographic attributes.”).

³⁰ Hearing on “Facial Recognition Technology (Part III): Ensuring Commercial Transparency & Accuracy” Before the H. Comm. on Oversight and Reform, 116th Cong. 11-12 (2020) (written testimony of Meredith Whitaker, CoFounder, AI Now Inst. NYU) (“In this testimony I use the broad term “facial recognition” to include a range of technical capabilities, including face detection (recognizing a face in an image), facial identification and verification (recognizing a single face, and distinguishing it from others), and facial analysis (inferring demographics, identity, and interior traits based on face data). While these constitute discrete capabilities that are often treated separately within the AI research field, the deployment of these tasks raises shared concerns. These functions are also often linked or packaged together, as when facial analysis is sold as an “add-on” to facial recognition products.”).

³¹ U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 2, at 5.

³² *Id.* at 16.

³³ U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 2, at 16-17.

³⁴ *Privacy Principles for Facial Recognition Technology in Commercial Applications*, FUTURE OF PRIVACY F., 13 (Sept. 2018), <https://fpf.org/wp-content/uploads/2019/03/Final-Privacy-Principles-Edits-1.pdf>.

³⁵ *Understanding Facial Recognition Systems*, PARTNERSHIP ON AI 8 (Feb. 19, 2020),

not typically create or derive a facial template, although again it is possible that facial template is generated like with facial detection as noted above. An example of this technology's application is determining whether customers are wearing a mask when they enter the store. This can help to inform stores about how many customers are complying with masking rules and alert employees when a shopper should be told to put on a mask.

Facial Authentication

Also known as "one-to-one" verification, facial authentication confirms an individual's identity by comparing the face template of a submitted facial image with a specific, known, facial template generated from a previously enrolled facial image (i.e., the reference image).³⁶ A facial template, also referred to as a faceprint, is a unique numerical expression generated by automatic measurements of an individual's facial characteristics from a facial image, such as the distance between the eyes or shape of the chin, through the use of computer algorithms.³⁷ The numerical expression (facial template) is then used to compare against the reference image's numerical expression to determine similarity.³⁸ This type of analysis answers the question, "is this person who they claim to be?"³⁹ An example of this technology's application is determining the identity of a customer at the checkout counter by matching their facial template to their previously uploaded image to confirm their payment. This can help to ensure secure access in lieu of a password and prevent fraud.

Facial Identification

Also known as "one-to-many" matching, facial identification confirms an individual's identity by searching a database for a reference matching a submitted facial template.⁴⁰ This type of analysis answers the question, "who is

https://partnershiponai.org/wp-content/uploads/2021/08/Understanding-Facial-Recognition-Paper_final.pdf.

³⁶ Fed. Trade Comm'n, *supra* note 29; U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 2, at 17.

³⁷ NAT'L TELECOMMS. AND INFO. ADMIN., PRIVACY BEST PRACTICE RECOMMENDATIONS FOR COMMERCIAL FACIAL RECOGNITION USE (June 17, 2016), https://www.ntia.doc.gov/files/ntia/publications/privacy_best_practices_recommendations_for_commercial_use_of_facial_recognition.pdf; *Street-Level Surveillance: Face Recognition*, ELEC. FRONTIER FOUND. (Oct. 24, 2017), <https://www.eff.org/pages/face-recognition> [<https://perma.cc/NF96-47WG>] ("The data about a particular face is often called a face template and is distinct from a photograph because it's designed to only include certain details that can be used to distinguish one face from another.").

³⁸ *Street-Level Surveillance: Face Recognition*, *supra* note 37.

³⁹ U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 2, at 6.

⁴⁰ Charles H. Romine, Director, Info. Tech. Lab'y, Nat'l Inst. of Standards & Tech., Testimony at U.S. H.R. Comm. on Homeland Sec.: Facial Recognition Technology (FRT) (Feb.

this person?”⁴¹ Both facial identification and facial authentication utilize similar algorithms and methods to assess facial images for matches, as described above. The only major difference between the two techniques is the scale of the reference dataset: with authentication, the reference dataset includes only 1 face and associated numerical expression; with identification, the reference dataset includes many faces and many associated numerical expressions.⁴² An example of this technology’s application is determining whether a customer who enters your store is someone who has shoplifted in the past by comparing the customer’s face with a database of faces of previous shoplifters. This can help to prevent theft and prevent customers from entering who have been banned from the store.

Depending upon how the facial identification algorithm is designed, it may provide a range of possible matches or one match together with a numerical measurement of the algorithm’s confidence in the match.⁴³ The quality of the facial image and the size and variety of the dataset that the algorithm is trained on could have an impact on the accuracy of such algorithms and their outputs.⁴⁴

Privacy Challenges Across Facial Analysis Technologies

Privacy scholars have developed numerous ways to conceptualize privacy challenges associated with technological innovations and data activities, consisting of multiple and overlapping dimensions.⁴⁵ With regard to facial analysis technology, privacy challenges predominantly arise from the following activities: information collection and information processing.

At a baseline, all facial analysis technology relies upon the large-scale collection of facial images, bringing with it privacy concerns regarding the collection of sensitive datasets.⁴⁶ These images can be built or obtained from private or public sources, including through consumer interactions with commercial services, volunteers or paid subjects, and web scraping.⁴⁷ All

6, 2020), <https://www.nist.gov/speech-testimony/facial-recognition-technology-frt-0> [<https://perma.cc/C3NL-4KB6>].

⁴¹ U.S. GOV’T ACCOUNTABILITY OFF., *supra* note 2, at 6.

⁴² *Id.* at 17.

⁴³ *Street-Level Surveillance: Face Recognition*, *supra* note 37.

⁴⁴ *Id.*; Barrett, *supra* note 28, at 231; Clare Garvie, *Garbage In, Garbage Out: Face Recognition on Flawed Data*, GEO. L. CTR. ON PRIV. & TECH. (May 16, 2019), <https://www.flawedfacedata.com/> [<https://perma.cc/M3LF-H4QT>].

⁴⁵ See e.g., Daniel Solove, *A Taxonomy of Privacy*, 154 U. OF PA. L. REV. 477 (2006) [hereinafter *A Taxonomy of Privacy*]; Danielle Keats Citron & Daniel Solove, *Privacy Harms*, 102 B.U. L. REV. 793 (2022); M. Ryan Calo, *The Boundaries of Privacy Harm*, 86 IND. L. J. 1131 (2011). This paper does not adopt a particular conception of privacy but instead recognizes that the concept of privacy is not singular and is ever evolving.

⁴⁶ U.S. GOV’T ACCOUNTABILITY OFF., *supra* note 2, at 14.

⁴⁷ U.S. GOV’T ACCOUNTABILITY OFF., *supra* note 2, at 14-15.

facial analysis technologies inflict a quasi-universal privacy harm due to the fact that anyone's facial image may be used for facial analysis: "If you have a drivers' license, walk around a public place monitored by cameras, or use social media, your face is most likely in a facial recognition database (with or without your knowledge)."⁴⁸ Such surveillance may lead a person to feel uncomfortable and even potentially cause a person to alter their behavior.⁴⁹ However, as mentioned above, the mere collection of a facial image (i.e., a photograph), does not trigger liability under BIPA. Instead, it is the processing of that photograph to extract a "scan of . . . face geometry" that creates potential violations.

All facial analysis technology involves some sort of processing of facial images by software to extract information, which may lead to economic and autonomy privacy harms.⁵⁰ While the privacy challenges associated with the processing facial image data for facial analysis are not equally dispersed across all persons (i.e., a facial analysis technique's accuracy may have a disproportionate effect on certain demographic groups),⁵¹ they affect the vast majority of the population.⁵² However, privacy harms for each of the facial analysis techniques depend on whether the ultimate use or ultimate collection is analyzed.

Privacy Challenges Related to Ultimate Use

The four facial analysis techniques listed above refer to the ultimate use (what actually occurs as a result of the technique's implementation). Privacy risks exist on a sliding scale for the four types of ultimate uses of the facial analysis technologies. Reduced privacy risks exist for both facial detection

⁴⁸ Barrett, *supra* note 28, at 240; *see also* Metz, *supra* note 27 (discussing a dataset called Brainwash, which was developed when researchers tapped into a camera at a café and over three days, took more than 10,000 images, which went into the database; it is unknown whether café patrons knew their images were being taken and used for research).

⁴⁹ *A Taxonomy of Privacy*, *supra* note 45, at 493; *see e.g.*, Tatum Millet, *A Face in the Crowd: Facial Recognition technology and the Value of Anonymity*, COLUM. J. OF L. (Oct, 18, 2020), <https://www.jtl.columbia.edu/bulletin-blog/a-face-in-the-crowd-facial-recognition-technology-and-the-value-of-anonymity> [<https://perma.cc/227E-SHCR>] (describing how protestors in Hong Kong during the 2019-2020 protests wore masks and carried umbrellas to conceal their faces from potential uses of facial recognition against them).

⁵⁰ Rui-Jie Yew & Alice Xiang, *Regulating Facial Processing Technologies: Tensions Between Legal and Technical Considerations in the Application of Illinois BIPA*, FACCT '22: 2022 ACM CONF. ON FAIRNESS, ACCOUNTABILITY, & TRANSPARENCY 1017, 1019 (June 2022); *see also* Citron & Solove, *supra* note 45, at 834-37, 845-55.

⁵¹ *See* sources cited *supra* note 11.

⁵² This note does not discuss how privacy risks may be created through technology abuse. *See e.g.*, Mitchell Clark, *Leaked Documents Link Huawei to China's Domestic Spying in Xinjiang*, THE VERGE (Dec. 14, 2021, 7:10 PM), <https://www.theverge.com/2021/12/14/22834860/huawei-leaked-documents-xinjiang-region-uyghur-facial-recognition-prisons-surveillance> [<https://perma.cc/UV43-FRQQ>].

and characterization technique because the purpose of the technology is only to determine if a face is present or identify attributes.

Heightened privacy challenges exist for both facial authentication and identification due to their inherent purpose to identify individuals. As noted by data privacy scholars Woodrow Hartzog and Frederic Stutzman, after a photo is tagged with an identifier, such as a name or profile link, it becomes searchable and makes information visible to searches, significantly eroding the protection of obscurity, and in turn threatening a user's privacy.⁵³ Identification is a central aspect of whether or not information is considered obscure, and information that cannot be directly linked to a particular person reduces the threat posed to that person's privacy.⁵⁴ Because the point of facial authentication and identification is to link a face to an identified person, these techniques inherently pose the largest threat to individual privacy. However, gray areas may exist across these ultimate uses.

While facial detection and characterization may not identify individuals by name, these technologies can be employed in a more advanced fashion, separating each individual face with a unique persistent identifier without actually identifying the individual in order to track the face across time within a certain setting.⁵⁵ An example of this technology's application is recognizing repeat customers and capturing each customer's average length of shopping, typical times the individual comes to the store, where the customer goes in the store most, and other activity to help to inform stores about their customers' habits and potentially use that information for in-store design tailoring or advertising purposes. Although the name of the customer may not be identified, a profile of the customer's in-store unique movements and shopping patterns is developed, blurring the lines drawn between these technologies' ultimate uses. These more sophisticated uses of facial detection and characterization will bring more privacy risk.

Privacy Challenges Related to Ultimate Collection

While the analysis of ultimate use can provide some insight into the privacy risks associated with these techniques, the ultimate use of a technology does not necessarily correlate with its ultimate collection. The ultimate collection of a faceprint through facial analysis presents the greatest privacy risk.⁵⁶ The greatest privacy risks exist for facial authentication and

⁵³ Woodrow Hartzog & Frederic D. Stutzman, *The Case for Online Obscurity*, 101 CAL. L. REV. 1, 47 (2013).

⁵⁴ *Id.* at 38.

⁵⁵ U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 2, at 16-17.

⁵⁶ Once a person or entity has obtained an individual's faceprint:
[T]hey can get your name, they can find your social networking account, and they can find and track you in the street, in the stores that you visit, the . . . buildings you enter, and the photos your friends post online. Your face is a conduit to an incredible amount of information about you, and facial recognition technology can allow others to access all of

identification when it comes to ultimate collection. Because facial authentication matches a facial template to a known individual, it requires the use of a reference image that typically includes identifiable information (facial template, image, name, and potentially other personally identifiable information) to compare against the input facial template.⁵⁷ For facial identification, matching is done against a reference dataset with multiple known individuals, meaning the reference dataset will contain even more personally identifiable information.⁵⁸

While minimal information is typically collected by facial detection and characterization technologies—usually insufficient for personal identification—as mentioned previously, it does not necessarily mean that a facial template or other identifiable information is not collected or utilized. For example, a facial characterization may only reveal in its output whether a facial image contains the presence of glasses but may still collect and analyze the image's eye sockets and nose shape, calculating the special relationships between those notal points, to detect the presence of glasses. Under these circumstances, it is the actual mathematical representation extracted from the image by the algorithm that must be analyzed (the ultimate collection), rather than the output of the algorithm (the ultimate use), to determine potential privacy harms.

When no personally identifiable information is created in detecting that a face is present in an image, facial detection carries the lowest privacy risks in comparison to the other three analysis techniques. However, even when no personally identifiable information is created in detecting facial attributes, facial characterization will still carry some privacy risk. While collection and analysis of one characteristic of a person's face (e.g., one's emotion) does not bring severe privacy concerns, collection of many characteristics about an individual's face could pose privacy risks, because the combination of such characteristics could reveal a unique profile, potentially eroding the anonymity of the technique. This phenomenon, dubbed the mosaic theory, posits that while one piece of information may not be considered personal information protected by the Fourth Amendment, the aggregation of such data could reveal deeply sensitive and personal information about an individual.⁵⁹

that information from a distance, without your knowledge, and in about as much time as it takes to snap a photo.

What Facial Recognition Technology Means for Privacy and Civil Liberties: Hearing Before the Subcomm. On Privacy Tech & the Law of the S. Comm. On the Judiciary, 112th Cong. 1-2 (2012) (statement of Sen. Al Franken, Chairman, Subcomm. On Privacy, Tech. & the Law of the S. Comm. On the Judiciary), <https://www.govinfo.gov/content/pkg/CHRG-112shrg86599/pdf/CHRG-112shrg86599.pdf>.

⁵⁷ U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 2, at 17.

⁵⁸ *Id.*

⁵⁹ David Gray & Danielle Keats Citron, *A Shattered Looking Glass: The Pitfalls and Potential of the Mosaic Theory of Fourth Amendment Privacy*, 14 N.C.J.L. & TECH. 381,

Further, when facial detection or facial characterization involves the use of a unique persistent identifier, privacy risks may develop. Some unique persistent identifiers are themselves considered today to be personally identifiable data, and thus the mere use of such identifiers bring some privacy concerns.⁶⁰ Additionally, with any unique persistent identifier, there is a risk that individuals might be identified in the future if the identifier is linked or linkable to other personally identifiable information.⁶¹

This distinction between the privacy risks associated with ultimate use and ultimate collection of a facial analysis technology, as well as the gray areas in between, demonstrate that both ultimate use and ultimate collection must be examined to accurately understand the privacy risk of a particular facial analysis technology. As photographs are excluded from BIPA, similar analyses have begun emerging in the courts to determine when exactly a “scan of . . . face geometry” has occurred, and thus at what moment liability attaches to the processing of a facial image.

EMERGING CONCEPTIONS OF “SCAN OF . . . FACE GEOMETRY” IN CASE LAW

BIPA itself does not define “scan of . . . face geometry,” and to date, no court has produced any clear definition, and no defendant has ever been held liable under the provision. However, in recent court orders, judges have begun to provide interpretations about what types of data may constitute “scan of . . . face geometry” under BIPA and more broadly what constitutes biometric information and biometric identifiers. Although only dictum, as most of the cases have largely been settled or dismissed for other reasons (as well as some still ongoing), these interpretations demonstrate the current avenues available for courts in interpreting “scan of . . . face geometry.”

In the lawsuits, defendant companies have argued vigorously that “scan of . . . face geometry” should be more narrowly defined through three major

381-382 (2013) (“[W]e can maintain reasonable expectations of Fourth Amendment privacy in certain quantities of information and data even if we lack reasonable expectations of privacy in the constituent parts of that whole.”) (citing Christopher Slobogin, *Making the Most of United States v. Jones in a Surveillance Society: A Statutory Implementation of Mosaic Theory*, 8 DUKE J. CONST. L. & PUB. POL’Y 1, 3-4 (2012) and Orin S. Kerr, *The Mosaic Theory of the Fourth Amendment*, 111 MICH. L. REV. 311, 313 (2012)); see also *United States v. Maynard*, 615 F3d 544, 561-562 (D.C. Cir. 2010), *aff’d sub nom. United States v. Jones*, 132 S. Ct. 945 (2012) (“As with the ‘mosaic theory’ often invoked by the Government in cases involving national security information, ‘What may seem trivial to the uninformed, may appear of great moment to one who has a broad view of the scene.’”).

⁶⁰ Jules Polonetsky, Omer Tene, & Kelsey Finch, *PII, Cookies, and De-ID: Shades of Gray*, IAPP (Apr. 25, 2016), <https://iapp.org/news/a/pii-cookies-and-de-id-shades-of-gray/> [<https://perma.cc/98E6-9JTN>] (noting FTC’s position that data is considered personally identifiable when it can be reasonably linked to a particular person, computer, or device and that particular unique persistent identifiers, such as device identifiers, MAC addresses, static IP address, and cookies, fall into this category).

⁶¹ U.S. GOV’T ACCOUNTABILITY OFF., *supra* note 2, at 16-17.

arguments: (1) The *Mechanism Argument*: “scan of . . . face geometry” should only include facial analysis techniques involving actual or express measurements of spatial or traditionally “geometric” quantities, like distance, depth, or angles, of facial features; (2) The *Ultimate Use Argument*: “scan of . . . face geometry” should only include facial analysis techniques that are actually used for identification purposes; (3) The *Ultimate Collection Argument*: “scan of . . . face geometry” should only include facial analysis techniques that capture, utilize, or produce data that could be used to identify an individual. These arguments have appeared mainly in defendant companies’ motions to dismiss, in the hopes of avoiding discovery at trial altogether, or in motions for summary judgement as last-ditch efforts to avoid further litigation.

The Mechanism Argument

In *In re Facebook Biometric Information Privacy Litigation*, plaintiffs argued that Facebook’s “Tag Suggestions” feature, which allegedly used facial-recognition technology to identify whether a user’s friends were depicted in an uploaded photo, violated BIPA because Facebook did not obtain informed consent before collecting facial geometries.⁶² Facebook argued that its technology does not obtain scans of face geometry because it does not measure distances and angles of human facial features for identification.⁶³ Rather, Facebook contended that its technology uses machining learning models to recognize human faces based on detection of “fiducial points” at the pixel level rather than using any particular human-notable facial features.⁶⁴

The district court, in denying Facebook’s motion for summary judgment, declined to opine on the operation of Facebook’s facial analysis technology, leaving the factual question of whether this facial analysis technology actually collects and stores a “scan of . . . face geometry” up to the jury.⁶⁵ However, the court went on to interpret the terms “scan” and “geometry” quite broadly:

None of these definitions [of “scan” or “geometry”] demands actual or express measurements of spatial quantities like distance, depth, or angles. In addition, the Illinois legislature’s decision to use the word “scan” rather than “record” does not indicate that express measurements are required, and limiting scans of face geometry to techniques that literally measure distances, depths, and angles cannot be squared with the legislature’s clear intent to regulate emergent biometric data collection

⁶² Complaint at 2-3, *In re Facebook Biometric Info. Priv. Litig.*, 185 F. Supp. 3d 1155 (N.D. Cal. 2016) (No. 3:15-CV-03747).

⁶³ *In re Facebook Biometric Info. Priv. Litig.*, No. 3:15-CV-03747-JD, 2018 WL 2197546, 4-5 (N.D. Cal. May 14, 2018) (citing Dkt. No. 298-24 at 5; Dkt. No. 341-30 at FBBIPA_00001214; Dkt. No. 341-30 at FBBIPA_00001216; Dkt. No. 298-1 at 2-3, 40).

⁶⁴ *Id.* at 4 (citing Dkt. No. 341-30 at FBBIPA_00001216).

⁶⁵ *Id.* at 3-4.

technology in whatever specific form it takes.⁶⁶

The court made clear that “scan of . . . face geometry” does not require actual or express measurements of spatial or traditionally “geometric” quantities, like distance, depth, or angles, of facial features. In doing so, the court indicated quite a comprehensive interpretation of the definition, potentially encompassing data utilized for all types of facial analysis techniques regardless of the actual mechanism of the technology—i.e., whether the technology measures “geometric” quantities of the face. While this case was ultimately settled,⁶⁷ its dicta likely will serve an important role in forthcoming cases.

The Ultimate Use Argument

In *Hazlitt v. Apple Inc.*, plaintiffs argued that Apple’s Photo app uses facial-recognition technology to scan individual face templates from a user’s photographs, create a unique faceprint for every person, and add frequently detected faces to the user’s ‘People’ album within the Photos app, thus violating BIPA because Apple did not obtain informed consent before collecting the face geometries.⁶⁸ Apple argued in their motion to dismiss for failure to state a claim under Rule 12(b)(6) that the purported facial templates it collects do not qualify as biometric identifiers under BIPA because they are anonymous and Apple does not actually identify any individual.⁶⁹ Rather, the Photos app recognizes faces of people in the photos and groups them together and the user is the one that gives names to faces.⁷⁰ Apple contended that it does not know if a user inputs names for the People album, just as it does not have access to the names of such albums nor access to the underlying face templates with or without the names attached.⁷¹

The district court granted Apple’s motion to dismiss in part and denied the motion in part.⁷² In doing so, the court held that it was not convinced of Apple’s proposed reading of the statute that biometric identifiers only

⁶⁶ *Id.* at 5-6 (citing *In re Facebook Biometric Info. Priv. Litig.*, 185 F. Supp. 3d 1155, 1171 (N.D. Cal. 2016)).

⁶⁷ *In re Facebook Biometric Info. Priv. Litig.*, No. 15-CV-03747-JD, 2020 WL 4818608 (N.D. Cal. Aug. 19, 2020); see also Dorothy Atkins, *Facebook’s \$650M Biometric Deal Gets Initial OK*, LAW360 (Aug. 21, 2020, 4:25 PM), <https://www.law360.com/articles/1302894/facebook-s-650m-biometric-deal-gets-initial-ok>.

⁶⁸ Amended Complaint at 1-21, *Hazlitt v. Apple Inc.*, 500 F. Supp. 3d 738 (S.D. Ill. 2020) (No. 3:20-CV-421-NJR).

⁶⁹ Defendant Apple Inc.’s Memorandum in Support of its Motion to Dismiss at 7-8, *Hazlitt v. Apple Inc.*, 500 F. Supp. 3d 738 (S.D. Ill. 2020) (No. 3:20-CV-421-NJR).

⁷⁰ *Id.* at 9.

⁷¹ *Id.*

⁷² *Hazlitt v. Apple Inc.*, 500 F. Supp. 3d 738, 741 (S.D. Ill. 2020), *appeal granted, judgment vacated sub nom. In re Apple Inc.*, No. 20-8033, 2021 WL 2451296 (7th Cir. Jan. 22, 2021), *reconsideration denied*, No. 3:20-CV-421-NJR, 2021 WL 2414669 (S.D. Ill. June 14, 2021).

include data that is used to actually identify a person.⁷³ Rather, the court noted the word “identifier” modifies the word “biometric” so as to signal that the types of data listed *could* be used to identify a person.⁷⁴ The court made clear that excluding data that does not identify an actual individual from the definition of “scan of . . . face geometry” is too narrow an interpretation. As a result, the court is representing again that it favors a more general definition of “scan of . . . face geometry” and that the scope of that definition is not based on the purpose of the technology alone—i.e., whether the technology was used to identify an individual or not. The court, however, noted that “even if Apple’s proposed reading is correct, within the Complaint, Plaintiffs allege that the Photos app applies an algorithm to identify the device user,” potentially leaving the issue open.⁷⁵ This case is still ongoing.

The Ultimate Collection Argument

In *Martinez v. Snapchat Inc.*, plaintiffs argued that Snapchat’s “Lenses” feature, which allows users to add real-time special effects and sounds to photographs, violates BIPA.⁷⁶ They allege that the feature utilizes facial analysis technology that collects, stores, and utilizes facial templates, geometric data extracted from the unique facial points and contours that they allege are biometric identifiers or information, without consent.⁷⁷

In Snapchat’s motion to compel arbitration, Snapchat noted that Lenses does not use facial analysis technology to place these special effects, but “[i]nstead it uses object recognition technology, which allows Lenses to identify a nose as a nose or an eye as an eye, but does not—and cannot—identify a nose or an eye, let alone a whole face, as belonging to any specific person.”⁷⁸ Snapchat’s website itself said their Lenses feature is designed to understand the general nature of things that appear in an image, not identify particular individuals.⁷⁹ Eight days after Snapchat filed its motion, the

⁷³ *Id.* at 749.

⁷⁴ *Id.* (citing *Rivera v. Google, Inc.*, 238 F. Supp. 3d 1088 (N.D. Ill. 2017) (interpreting “biometric identifier” to mean a biology-based set of measurements that can be used to identify a person)).

⁷⁵ *Id.*

⁷⁶ Complaint at 3-4, *Martinez v. Snapchat, Inc.*, No. 2:16-cv-05182-SVW (C.D. Cal. May 23, 2016).

⁷⁷ *Id.*

⁷⁸ Motion to Compel Arbitration at 1, *Martinez v. Snapchat, Inc.*, No. 2:16-cv-05182-SVW (C.D. Cal. Aug. 22, 2016) (asserting also that Snapchat’s arbitration notice includes a waiver to participate in class-action lawsuits or class wide arbitrations).

⁷⁹ See Ananya Bhattacharya, *Snapchat Is the Latest Tech Company To Be Sued For Mapping Faces*, QUARTZ (July 25, 2016), <https://qz.com/741028/snapchat-is-the-latest-tech-company-to-be-sued-for-mapping-faces/> [https://perma.cc/RR9U-CKVR].

plaintiffs voluntarily dismissed their complaint without prejudice.⁸⁰ Because the dismissal, Snapchat's arguments were not addressed by the court.

Similar arguments have been developed in suits regarding other biometric identifiers and biometric information. In *Carpenter v. McDonald's Corp.*, plaintiffs alleged that McDonald's AI voice assistant uses voice recognition technology extracts "voiceprint biometrics" in order "to obtain identifying information such as the customer's age, gender, accent, nationality, and national origin" when a customer is placing an order without the customer's consent, thus violating BIPA.⁸¹ They allege the technology's purpose is to correctly interpret customer orders and identify repeat customers to provide a tailored experience at the restaurants' drive-through lanes.⁸² In McDonald's motion to dismiss, McDonald's argues that plaintiff's failed to state a claim under Rule 12(b)(6) because McDonald's drive-through technology does not use biometric identifiers or biometric information.⁸³

First, McDonald's points to the dictionary definition of a voiceprint, defining it as "[a] distinctive pattern of curved lines and whorls made by a machine that measures human vocal sounds for *the purpose of identifying an individual speaker*."⁸⁴ McDonald's contended that age, gender, accent, nationality, and national origin are not unique to any specific individual and, thus, are not "identifying" within the scope of BIPA and nor are they biometric.⁸⁵ Further, McDonald's argued that the technology does not generate any information that *could be* used to identify an individual, "such as biological characteristics, or distinctive patterns of curved lines and whorls used to measure human vocal sounds."⁸⁶ Additionally, McDonald's maintained that "the allegedly "identifying information" described in the Complaint—in addition to not being "identifying" or biometric—is actually "training data" and is used for training the conversational agent to recognize and respond to speech, not to identify individual speakers."

The district court granted McDonald's motion in part and denied it in part, finding that the plaintiff alleged enough factual content to plausibly allege that the defendant collected his voiceprint.⁸⁷ The court noted that it cannot

⁸⁰ Notice of Voluntary Dismissal, *Martinez v. Snapchat, Inc.*, No. 2:16-cv-05182-SVW (C.D. Cal. Aug. 30, 2016).

⁸¹ Complaint at 3, *Carpenter v. McDonald's Corp.*, No. 1:21-cv-02906 (N.D. Ill. May 28, 2021).

⁸² *Id.*

⁸³ Memorandum in Support of Motion to Dismiss at 1, *Carpenter v. McDonald's Corp.*, No. 1:21-cv-02906 (N.D. Ill. May 28, 2021).

⁸⁴ *Id.* at 5 (citing *Voiceprint*, Black's Law Dictionary (11th ed. 2019)).

⁸⁵ *Id.* at 7.

⁸⁶ *Id.*

⁸⁷ Order at 1, *Carpenter v. McDonald's Corp.*, No. 1:21-cv-02906 (N.D. Ill. Jan. 13, 2022).

conclude as a matter of law that McDonald's does not collect voiceprints through its AI voice assistance technology.⁸⁸ However, the court did note that characteristics like pitch, volume, duration, accent, speech pattern, gender, age, nationality, and national origin alone are not biometric identifiers under BIPA.⁸⁹ The court further stated that McDonald's may show during discovery that the technology cannot or does not collect any vocal information that could be used to uniquely identify an individual, in which case summary judgement may be appropriate.⁹⁰

Litigation Takeaways

These cases demonstrate the variety of ways that the definition of "scan of . . . face geometry" may be construed under BIPA. The court's rejection of the *Mechanism Argument* in *In Re Facebook Biometric Information Privacy Litigation* indicates that courts may choose to ignore the facial analysis technology's technical functioning (i.e., whether "geometric" quantities of the face are actually measured), and instead consider any mere analysis done to a face to be a "scan of . . . face geometry." If this case's dictum is followed, "scan of . . . face geometry" would be defined quite broadly to include all facial analysis techniques regardless of ultimate use or ultimate collection.

The Court's response to the *Ultimate Use Argument* in *Hazlitt v. Apple Inc.* indicates that courts may choose to ignore the facial analysis technology's purpose—i.e., whether individuals are actually identified—when construing "scan of . . . face geometry." If this case's dictum is followed, "scan of . . . face geometry" would be defined quite broadly to include not only facial identification and facial authentication, but also potentially facial detection and facial characterization. If Apple's argument were to be followed, facial analysis techniques falling short of identification would evade BIPA's protections, leaving a crack through which potentially privacy invasive facial analysis technologies would go unregulated.

The Court's response to the *Ultimate Collection Argument* proffered in *Martinez v. Snapchat Inc.* and *Carpenter v. McDonald's Corp.* indicate another potential route: courts may define "scan of . . . face geometry" by the identification potential of the data collected. If this approach were to be followed, facial analysis technologies that themselves don't capture a biometric identifier, but potentially capture identifiable biometric information, would be subject to BIPA's protections; those facial analysis technologies that do not generate any identifiable information would not fall under BIPA.

This ultimate collection approach would construe "scan of . . . face geometry" to encompass facial identification and facial authentication by virtue of their capacity to identify individuals through the capture of a biometric identifier, but it would not necessarily include facial characterization or facial

⁸⁸ *Id.* at 6.

⁸⁹ *Id.*

⁹⁰ *Id.* at 7.

detection, unless those techniques generated biometric information that could be used to identify an individual, alone or in combination with other data. This middle-ground approach is likely the best path forward and has only been utilized in one other jurisdiction thus far: California.

OTHER JURISDICTIONS' TREATMENT OF BIOMETRIC IDENTIFIERS AND
INFORMATION

In response to the rapidly growing use of facial analysis and biometrics, a number of states have enacted similar biometric privacy laws, including California,⁹¹ Virginia,⁹² Texas,⁹³ Colorado,⁹⁴ Washington,⁹⁵ and Arkansas,⁹⁶ as well as some cities, including Portland, Oregon⁹⁷ and New York City.⁹⁸ The

⁹¹ CAL. CIV. CODE §§ 1798.100-199.95 (West 2020).

⁹² VA. CODE ANN. §§ 59.1-575 to -585 (West 2021).

⁹³ TEX. BUS. & COM. CODE ANN. § 503.001 (West 2017).

⁹⁴ Colorado Privacy Act, S.B. 21-190, 73d Leg., 2021 Regular Sess. (Colo. 2021) (To be codified in COLO. REV. STAT. Title 6-1-1301).

⁹⁵ WASH. REV. CODE ANN. §19.375 (West 2017).

⁹⁶ ARK. CODE ANN. § 4-110 (West 2021).

⁹⁷ PORTLAND, OR., CITY CODE, Ch. 34.10 Prohibit the use of Face Recognition Technologies by Private Entities in Places of Public Accommodation in the City of Portland (2021).

⁹⁸ N.Y.C., N.Y. ADMIN. CODE §§ 22-1201 to -1205 (2021).

Virginia,⁹⁹ Colorado,¹⁰⁰ Washington,¹⁰¹ Arkansas,¹⁰² and New York City¹⁰³ laws define biometric very similarly to BIPA, including only data that is used for identification purposes (similar to ultimate use arguments). The Portland ordinance is mechanism-focused, broadly defining “face recognition technologies” to mean “automated or semi-automated processes using Face Recognition that assist in identifying, verifying, detecting, or characterizing facial features of an individual or capturing information about an individual based on an individual’s face.”¹⁰⁴ This approach would likely capture all types of facial analysis technologies; however, “face recognition,” in turn, is defined to mean “the automated searching for a reference image in an image repository by comparing the facial features of a probe image with the features of images contained in an image repository (one-to-many search),” referring only to facial identification.¹⁰⁵ Due to these conflicting definitions, it remains unclear whether use of facial analysis technologies that do not involve “one-to-many” searches would fall within the ordinance’s definition of face

⁹⁹ The Virginia Consumer Data Protection Act (VCDPA) defines biometric data as “data generated by automatic measurements of an individual’s biological characteristics, such as a fingerprint, voiceprint, eye retinas, irises, or other unique biological patterns or characteristics that is *used to identify a specific individual*,” which presumably would include faceprints or scans of face geometry as well. See VA. CODE ANN., *supra* note 92, at § 59.1-575 (emphasis added).

¹⁰⁰ The Colorado Privacy Act (CPA) defines “sensitive data” to include “genetic or biometric data that may be processed *for the purposes of uniquely identifying an individual*.” See COLO. REV. STAT., *supra* note 94, at § 6-1-1303(24) (emphasis added).

¹⁰¹ The Washington Act Relating to Biometric Identifiers defines biometric identifier as “data generated by automatic measurements of an individual’s biological characteristics, such as a fingerprint, voiceprint, eye retinas, irises, or other unique biological patterns or characteristics that is *used to identify a specific individual*.” See WASH. REV. CODE ANN., *supra* note 95, at §19.375.010(1) (emphasis added).

¹⁰² The Arkansas Personal Information Protection Act defines biometric data as “data generated by automatic measurements of an individual’s biological characteristics, including without limitation: (a) Fingerprints; (b) Faceprint; (c) A retinal or iris scan; (d) Hand geometry; (e) Voiceprint analysis; (f) Deoxyribonucleic acid (DNA); or (g) Any other unique biological characteristics of an individual if the characteristics are *used by the owner or licensee to uniquely authenticate the individual’s identity* when the individual accesses a system or account.” See ARK. CODE ANN., *supra* note 96, at § 4-110-103(7)(E) (emphasis added).

¹⁰³ The New York Ordinance defines “biometric identifier information” as a “physiological or biological characteristic that is *used by or on behalf of a commercial establishment, singly or in combination, to identify, or assist in identifying, an individual*, including, but not limited to: (i) a retina or iris scan, (ii) a fingerprint or voiceprint, (iii) a scan of hand or face geometry, or any other identifying characteristic.” See N.Y.C., N.Y. ADMIN. CODE, *supra* note 98, at § 22-1201 (emphasis added).

¹⁰⁴ PORTLAND, OR., CITY CODE, *supra* note 97, at § 34.10.020(b).

¹⁰⁵ *Id.* at § 34.10.020(a).

recognition technologies.¹⁰⁶ The Texas law, in comparison, defines biometric identifiers the most broadly, including a “retina or iris scan, fingerprint, voiceprint, or record of hand or face geometry” without any qualifiers about purpose of the use of such identifiers.¹⁰⁷

The European Union’s General Data Protection Regulation (GDPR) places restrictions on “personal data resulting from specific technical processing relating to the physical, physiological or behavioural characteristics of a natural person, which allow or confirm the unique identification of that natural person, such as facial images or dactyloscopic data.”¹⁰⁸ The European Data Protection Board’s (EDPB) has interpreted this definition to require three criteria: (1) the data must relate to the physical, physiological or behavioural characteristics of a natural person; (2) the data must result from a specific technical processing; and (3) the data must be used for the purpose of uniquely identifying a natural person.¹⁰⁹ This definition combines both the ultimate use and mechanism approaches; however, it leaves out data that is not used, but could be used, for identification (the ultimate collection purpose).

By defining biometric information broadly to be either ultimate use-based or mechanism-based, these jurisdictions will at some point be forced to tackle the same questions that courts are facing with BIPA today: how should courts address facial analysis technologies that are not used for identification purposes by the company itself, but collect potentially identifiable biometric information? How courts ultimately decide to define BIPA’s “scan of . . . face geometry” will have a significant effect on how violations of the U.S. state and city laws are approached because Illinois remains the state with the broadest private right of action, making BIPA caselaw the “gold standard” among biometrics litigation and setting the stage for the other jurisdictions’ interpretations.¹¹⁰

California, however, has taken a different approach from the other jurisdictions, defining biometric information based on its identification potential,

¹⁰⁶ PERKINS COIE LLP, *Time to Face the Country’s Strictest Facial Recognition Law* (Dec. 22, 2020),

<https://www.perkinscoie.com/en/news-insights/time-to-face-the-countrys-strictest-facial-recognition-law.html> [<https://perma.cc/V4RA-L5UK>].

¹⁰⁷ TEX. BUS. & COM. CODE ANN. § 503.001(a) (West 2017).

¹⁰⁸ Regulation 2016/679, of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data and on the Free Movement of Such Data, and Repealing Directive 95/46/EC (General Data Protection Regulation), 2016 O.J. (L 119) 34, 14.

¹⁰⁹ Guidelines 3/2019 on Processing of Personal Data Through Video Devices Version 2.0, EUROPEAN DATA PROTECTION BOARD 18 (Jan. 29, 2020), https://edpb.europa.eu/sites/default/files/files/file1/edpb_guidelines_201903_video_devices_en_0.pdf.

¹¹⁰ See DiRago, *supra* note 9. The laws of Colorado, Virginia, and Texas do not provide a private right of action. California’s law only has a private right of action related to negligence with regard to a data breach.

not its identification purpose or mechanism. California's Consumer Privacy Rights Act (CPRA) defines biometric information as "an individual's physiological, biological, or behavioral characteristics, including an individual's deoxyribonucleic acid (DNA), that can be used, singly or in combination with each other or with other identifying data, to establish individual identity."¹¹¹ This approach, similar to the arguments made in *Martinez v. Snapchat Inc.* and *Carpenter v. McDonald's Corp* likely is the most practical path forward, as it ensures identifiable data, even if not used for identification purposes, does not slip through the cracks of regulation.

WHAT SHOULD CONSTITUTE A "SCAN OF . . . FACE GEOMETRY"?

Challenges with the Mechanism Argument

The ramifications of a mechanism-based definition of "scan of . . . face geometry" as defined by the courts, encompassing any facial analysis technique performs some geometric analysis of the face, even when it does not or cannot identify the person in the image or video (i.e., covering facial detection, characterization, authentication, and identification) are wide-ranging. Under this broad interpretation, companies that employ facial analysis for any purpose may be liable to suit in Illinois, which could create a cascade of class action lawsuits in Illinois itself and in other states—more than we already have.¹¹² Other states with similar privacy laws would likely follow Illinois' lead, opening companies to further enforcement action or lawsuits in those jurisdictions as well (and potentially the twenty-seven other states that have BIPA-modeled legislation pending as of June 2021).¹¹³

Whether it be private, class action lawsuits or public lawsuits by an attorney general, such litigation can be extremely expensive for both large companies and small companies alike. Under BIPA, prevailing plaintiffs may recover statutory damages of up to \$1000 per negligent violation and up to \$5000 per intentional or willful violation.¹¹⁴ Even if plaintiffs are

¹¹¹ CAL. CIV. CODE § 1798.140(c) (West 2020).

¹¹² See Jake Holland, *Meta's Facial Recognition Lawsuit Underscores Enforcement Risk*, BLOOMBERG LAW (Feb. 15, 2022), <https://news.bloomberglaw.com/privacy-and-data-security/metas-texas-facial-recognition-suit-shows-enforcement-headache> [<https://perma.cc/X7LZ-K8VU>] (noting that the fact that Texas's Attorney General has decided to sue Meta alleging Facebook and Instagram monetized people's faces without their consent and maintained a facial-geometry database could create a domino effect and spur other attorneys general to launch their own biometric privacy investigations into technology companies).

¹¹³ Christopher G. Ward & Kelsey C. Boehm, *Developments in Biometric Information Privacy Laws*, FOLEY & LARDNER LLP BLOG (June 17, 2021), <https://www.foley.com/en/insights/publications/2021/06/developments-biometric-information-privacy-laws> [<https://perma.cc/86LD-LH4H>].

¹¹⁴ Illinois Biometric Information Privacy Act (BIPA), 740 ILL. COMP. STAT. ANN. 14/20

unsuccessful, such litigation and investigations may also bring reputational harms. In reaction to these risks, some companies have even begun halting the roll out of biometric technologies in Illinois completely.¹¹⁵

Additionally, a broad definition sweeping all facial analysis technologies under the scope of BIPA could have chilling effects on emerging research. Recently, academics and companies have begun to explore how the face may be an indicator of health and wellness. For example, researchers have developed the Face2Gene, a smartphone app that uses deep-learning algorithms to analyze faces and predict the presence of certain genetic neurodevelopmental disorders, such as Cornelia de Lange syndrome, Angelman syndrome, and Noonan syndrome, among others.¹¹⁶ These disorders, while all associated with having distinctive facial features, are not always readily apparent to doctors.¹¹⁷ In an experiment comparing the Face2Gene app with clinicians, the app outperformed the doctors when presented with pictures of 10 children with fairly recognizable disorders—in only two instances did more than 50% of the 49 clinicians pick the correct disorder; Face2Gene picked the correct disorder for seven pictures.¹¹⁸ This technology, is currently available free to healthcare professionals, has over 150,000 images in its database, and is helping hospitals and families save costs by avoiding the expensive multi-gene panel testing.¹¹⁹

(2008); see also Laura Balson, *Illinois Biometric Act Has Been a Class Action Nightmare, But Things May Get Better*, COSTANGY BROOKS, SMITH & PROPHETE LLP (July 19, 2021), <https://www.constangy.com/newsroom-newsletters-1079> [https://perma.cc/75WM-DH44] (“For large companies, the alleged damages can be in the millions or billions of dollars, even without a single injured plaintiff in the class. For small companies, a BIPA lawsuit can mean the end of the business.”).

¹¹⁵ Jake Holland, *As Biometric Lawsuits Pile Up, Companies Eye Adoption With Care*, BLOOMBERG LAW (Feb. 9, 2022) <https://news.bloomberglaw.com/privacy-and-data-security/as-biometric-lawsuits-pile-up-companies-eye-adoption-with-care> [https://perma.cc/XY7G-9Q6J] (“That litigation risk is causing some companies to avoid including Illinois in their biometric rollout plans, as many want to use the innovative technology but aren’t willing to risk pricey litigation, said David Saunders, a partner at McDermott Will & Emery in Chicago. ‘If you’re not compliant with the law in Washington or Texas, the outcome is likely a conversation with the attorney general,’ Saunders said. ‘You’re not bogged down with litigation that will cost you six figures—it’s a different risk analysis.’”).

¹¹⁶ Yaron Gurovich, Yair Hanani, Guy Nadav, Nicole Fleischer, Dekel Gelbman, Lina Basel-Salmon, Peter M. Krawitz, Susanne B. Kamphausen, Martin Zenker, Lynne M. Bird & Karen W. Gripp, *Identifying Facial Phenotypes of Genetic Disorders Using Deep Learning*, 25 NATURE MED. 60, 60 (2019); see also Elie Dolgin, *AI Face-Scanning App Spots Signs of Rare Genetic Disorders*, NATURE NEWS (Jan. 7, 2019), <https://www.nature.com/articles/d41586-019-00027-x> [https://perma.cc/SA43-RQ4L].

¹¹⁷ See Dolgin, *supra* note 116.

¹¹⁸ *Id.*

¹¹⁹ *Id.*

Researchers have also teamed up with technology companies to explore the face's hidden secrets. Recently, Apple, Biogen, and UCLA announced that they have partnered to develop an iPhone feature that can help diagnose mental health disorders.¹²⁰ In addition to capturing data from the iPhone's keyboard and audio sensors and from the Apple watch, the feature would also capture analysis of participants' facial expressions to measure stress, anxiety, depression, and cognitive decline.¹²¹ Other emerging areas of facial analysis for health research include detecting the presence of cancer by analyzing facial skin and facial adiposity (perceived facial weight),¹²² and localizing and diagnosing malignant lesions on the face by identifying points on the face that differ comparatively in brightness or color compared with the surrounding area,¹²³ among many others.

Outside of diagnosing health conditions, researchers are also trying to detect pain in infants post-operation.¹²⁴ Because infants don't always cry when they are in pain, it can be difficult for doctors to determine when infants truly are in pain, and untreated pain in newborns can lead to a number of neurological and behavioral issues.¹²⁵ Due to these challenges, researchers are developing an algorithm that captures facial expressions along with crying sounds, body movement, and vital sign changes, and then generates a pain assessment to assist caregivers and patients themselves prevent unwarranted interventions and failures to treat.¹²⁶

¹²⁰ Rolfe Winkler, *Apple is Working on iPhone Feature to Help Detect Depression, Cognitive Decline*, WALL STREET J. (Sept. 21, 2021 1:07 PM), <https://www.wsj.com/articles/apple-wants-iphones-to-help-detect-depression-cognitive-decline-sources-say-11632216601>.

¹²¹ *Id.*

¹²² Bin Liang, Na Yang, Guosheng He, Peng Huang & Yong Yang, *Identification of the Facial Features of Patients with Cancer: A Deep Learning-Based Pilot Study*, 22 J. MED INTERNET RES. 1, 1 (2020).

¹²³ Seung Seog Han, Ik Jun Moon, Woohyung Lim, In Suck Suh, Sam Yong Lee, Jung-Im Na, Seong Hwan Kim & Sung Eun Chang, *Keratinocytic Skin Cancer Detection on the Face Using Region-Based Convolutional Neural Network*, 156 JAMA DERMATOL. 29, 29-31 (Dec. 4, 2019).

¹²⁴ Ghada Zamzmi, Rahul Paul, Sirajus Salekin, Dmitry Goldgof, Rangachar Kasturi, Thao Ho & Yu Sun, *Convolutional Neural Networks for Neonatal Pain Assessment*, 1 IEEE TRANS. BIOMETRICS, BEHAV., IDENTITY SCI. 192, 192 (May 27, 2019), <https://ieeexplore.ieee.org/document/8723168> [hereinafter *Convolutional Neural Networks*]; Ghada Zamzmi, Chih-Yun Pai, Dmitry Goldgof, Rangachar Kasturi, Terri Ashmeade, & Yu Sun, *A Comprehensive and Context-Sensitive Neonatal Pain Assessment Using Computer Vision*, 13 IEEE TRANS. AFFECTIVE COMPUT. 28, 28 (July 10, 2019), <https://ieeexplore.ieee.org/document/8758989> [hereinafter *Neonatal Pain Assessment*].

¹²⁵ Kristina Grifantini, *Detecting Faces, Saving Lives: How Facial Recognition Software is Changing Health Care*, 11 IEEE PULSE 2, 4 (May 7, 2020), <https://ieeexplore.ieee.org/document/9089065>.

¹²⁶ *Convolutional Neural Networks*, *supra* note 124, at 199; *Neonatal Pain Assessment*,

While most of these facial analysis algorithms were developed in the clinical research setting, thus likely requiring opt-in consent from the patients who provided their photos for research, some researchers utilized free databases of facial photos to develop or train their algorithms.¹²⁷ In such cases, assuming that individuals in Illinois were part of such facial databases, they potentially could be liable under BIPA even if their algorithms do not capture identifiable data using the broad, mechanism-based definition. To halt such important research because consent was not obtained, even when the individuals were not identified, would slow down these vital health advancements. It is unlikely lawsuits would actually emerge against such researchers; however, the threat of potential liability could chill research efforts in these spaces.

A broad mechanism-based definition capturing all types of facial analysis techniques could also create negative externalities for advancements in facial analysis technology more generally. The algorithms that are utilized in facial analysis technology require large training databases of diverse facial images to work well.¹²⁸ Such databases, however, are typically developed today by scraping the Internet without first obtaining consent from the people who posted them and then are posted publicly for researchers to utilize.¹²⁹ Today, companies and research organizations alike utilize these public databases to train their facial analysis algorithms,¹³⁰ and it is believed that hundreds of academic papers have utilized public photo training databases.¹³¹ The use of these datasets has recently become the subject of a number BIPA class actions, notably the IBM Diversity in Faces (DiF) dataset, which has been at the heart of lawsuits against IBM, Amazon, Google, Microsoft, and FaceFirst; all were accused of violating BIPA by utilizing the dataset without the consent of individuals.¹³² This dataset was composed of a million publicly

supra note 124, at 28.

¹²⁷ See Liang et al., *supra* note 122 (“A face image data set of people without cancer was built by randomly selecting images from the publicly available MegaAge data set according to the sex and age distribution of the cancer face image data set”).

¹²⁸ Richard Van Noorden, *The Ethical Questions that Haunt Facial-Recognition Research*, 587 NATURE 354, 355 (Nov. 19, 2020), <https://www.nature.com/articles/d41586-020-03187-3> [<https://perma.cc/YG43-SELQ>].

¹²⁹ *Id.*

¹³⁰ Olivia Solon, *Facial Recognition’s ‘Dirty Little Secret’: Millions of Online Photos Scraped Without Consent*, NBC NEWS (Mar. 12, 2019, last updated Mar. 17, 2019), https://www.nbcnews.com/tech/internet/facial-recognition-s-dirty-little-secret-millions-online-photos-scraped-n981921_ [<https://perma.cc/F9VG-GDHT>]; Cole Calistra, *60 Facial Recognition Databases*, KAIROS (May 7, 2015), <https://www.kairos.com/blog/60-facial-recognition-databases> [<https://perma.cc/R9XV-V64X>] (providing links to each database).

¹³¹ Solon, *supra* note 130 (noting that such academic papers have contributed greatly to the accuracy of facial recognition and analysis tools).

¹³² See Complaint at 2, *Vance v. Int’ Bus. Machs. Corp. (IBM)*, No. 1:20-cv-00577, 2020

available facial images.¹³³ The DiF dataset did not link the photos to names, so systems trained on the photos would not be able to identify named individuals,¹³⁴ unless images of identified individuals were matched against the DiF dataset. While these suits are still ongoing, if a broad interpretation of “scan of. . . face geometry” is utilized, companies and researchers alike would be prohibited from performing any type of research on the images in the DiF dataset, regardless of whether the analysis identified individuals or yielded results that could lead to identification.

Finally, a mechanism-based definition of “scan of. . . face geometry” could also chill the work of academic researchers and computer scientists who wish to investigate a companies’ facial analysis tools for discrimination and bias. If all facial analysis techniques are subject to BIPA, even researchers performing anti-discrimination audit testing of facial analysis tools may be subject to class actions as well.

Challenges with the Ultimate Use Argument

The ramifications of a too-narrow definition, only covering scans of a person’s face geometry that are used for identification purposes (i.e., facial identification or authentication), are also plentiful. While BIPA’s definition of biometric information is technically written in this manner,¹³⁵ this definition, as advocated by many technology companies facing suit today, would gut BIPA’s main purpose – to protect the privacy of biometric information. While the narrow definition of “scan of. . . face geometry” would evade the problems noted above with the broad definition (i.e., litigations floodgates opening, health research being stalled, and facial analysis advancements being slowed), it would lead to a number of privacy related challenges and potential abuses.

Take for example two social media companies – Company A employs facial analysis technology that allows you add filters on your face when taking a

WL 416656 (N.D. Ill. Jan. 24, 2020); Complaint at 2, *Vance v. Amazon.com Inc.*, No. 2:20-cv-01084 (W.D. Wash. July 14, 2020); Complaint at 1, *Vance v. Google LLC*, No. 5:20-cv-04696 (N.D. Cal. July 14, 2020); Complaint at 2, *Vance v. Microsoft Corp.*, No. 2:20-cv-01082 (W.D. Wash. July 14, 2021); Complaint at 3, *Vance v. Facefirst, Inc.*, No. 2:20-cv-06244 (C.D. Cal. July 14, 2020).

¹³³ John R. Smith, *IBM Research Releases ‘Diversity in Faces’ Dataset to Advance Study of Fairness in Facial Recognition Systems*, IBM RESEARCH BLOG (Jan. 29, 2019, last updated Feb. 15, 2019),

<https://www.ibm.com/blogs/research/2019/01/diversity-in-faces/>
[<https://perma.cc/2B3Z-AVZG>].

¹³⁴ Solon, *supra* note 130.

¹³⁵ Illinois Biometric Information Privacy Act (BIPA), 740 ILL. COMP. STAT. ANN. 14/10 (2008) (“Biometric information” means any information, regardless of how it is captured, converted, stored, or shared, based on an individual’s biometric identifier *used to identify an individual.*”) (emphasis added).

photo or video without identifying you, and Company B employs the same facial analysis technology to automatically tag you in a photo that you upload. Both examples involve the use of a face template (and in this case let's assume the same face template), but for different purposes—one for identification and the other for photo enhancement. Should the narrow, ultimate use definition be adopted, only Company B could be sued under BIPA for violations of the law, whereas Company A would evade litigation. Just because the purpose of the technology is not for identification, it does not necessarily mean that the data derived from the technology is not just as identifiable as the data derived from the technology used for identification purposes.

Additionally, mosaic theory challenges may arise due to the accumulation of data derived from facial analysis applications that alone may not be identifiable, but in the aggregate can lead to potential identification.¹³⁶ Under a narrow definition, only data utilized for facial authentication or identification (i.e., for identification purposes) would fall under the scope of BIPA's "scan of . . . face geometry," allowing data utilized for facial detection or characterization to be freely used by companies. While characterization and detection data may not in most cases capture or utilize identifiable data, in some cases, it may. Facial detection and characterization should not be automatically excluded from BIPA's scope just because of the purpose of the facial analysis is not identification.

Meeting in the Middle: The Ultimate Collection Argument

As facial analysis technology continues to develop, the purpose the facial analysis technology and its mechanisms will not be as important as what can be done with the data generated from such technology. BIPA's focus is on advancing technology, whose "full ramifications . . . are not fully known."¹³⁷ The construction of "scan of . . . face geometry" should also align with this theme. While data derived from facial identification and authentication utilize facial templates (a biometric identifier) and clearly should be included in the definition of "scan of . . . face geometry," so should the data derived from facial detection and characterization that has the potential for identification (biometric information with the potential for identifiability). Defining "scan of . . . face geometry" based on its ultimate collection and the identification potential like the CPRA, not its ultimate use for identification purposes or its mechanism, would be a practical way to keep pace with the rapid advancement of facial analysis technology while ensuring important privacy rights are protected. If the facial analysis technologies capture data that could be used for identification of unique individuals, such technologies should be subject to BIPA.

Similar to the argument made in *Martinez v. Snapchat Inc.* and *Carpenter v. McDonald's Corp.*, "scan of . . . face geometry" under this ultimate

¹³⁶ See Gray & Keats Citron, *supra* note 59, at 386.

¹³⁷ Biometric Information Privacy Act, 14/5(f).

collection based definition would encompass only biometric identifiers and biometric information derived from the facial analysis application that could be used to identify the person alone or in combination with other data; it would exclude data that definitively could not be used to identify persons. Excluding such data should allow for the important health, technological, and anti-discrimination research to continue without putting individual privacy at risk, because research which does not identify any individuals and does not capture data that could identify individuals could continue without the threat of litigation.¹³⁸ This standard would also take into account the rapid advancements in facial analysis technology and allow courts to consider its sophistication when addressing an alleged violation. If facial analysis technology advances to allow for identification of persons by the mere mouth structure, then that analysis would fall under “scan of. . . face geometry” under this new standard, requiring consent before the technology is employed.

Despite the benefits of this approach for health research, technological advancement for the field of facial analysis, and anti-discrimination research, some litigation costs likely would remain. As mentioned in *Carpenter v. McDonald's Corp.*, as long as the plaintiffs allege enough factual content to plausibly allege that the defendant collected, utilized, or profited from the plaintiff's biometric identifier or identifiable biometric information in violation under BIPA, courts are required to take plaintiffs allegations as true.¹³⁹ In light of this precedent, courts are likely to continue to deny companies' motions to dismiss for failure to state a claim like in the cases mentioned above.¹⁴⁰ Cases will then likely move to discovery to determine how the technology at issue functions and whether it actually captures data that could be used for identification purposes, alone or in combination. If the technology does neither of those things, motions for summary judgment likely will be granted.¹⁴¹ Due to the high cost of litigation generally and rising settlement costs as litigation progresses, companies may be pressured to settle, instead of

¹³⁸ Research involving rare disorders would likely be an exception here because the population size would be so small that the data derived from facial characterization research on these populations would likely be identifiable.

¹³⁹ Order at 6-7, *Carpenter v. McDonald's Corp.* No. 1:21-cv-02906 (N.D. Ill. Jan. 13, 2022).

¹⁴⁰ This note does not address other motions that are currently being brought against BIPA allegations, particularly with regard to standing. See Tiffany Cheung, Michael Burshteyn, & Camille Framroze, *Privacy Litigation 2020 Year in Review: BIPA Litigation*, MORRISON & FOERSTER LLP (Jan. 12, 2021), <https://www.mofo.com/resources/insights/210111-bipa-litigation.html> [<https://perma.cc/4WVT-KMAL>]; Steven Grimes & Eric Shinabarger, *Biometric Privacy Litigation: The Next Class Action Battleground*, BLOOMBERG LAW (Jan. 9, 2018, 4:38 PM) <https://news.bloomberglaw.com/business-and-practice/biometric-privacy-litigation-the-next-class-action-battleground> [<https://perma.cc/YY63-WF7H>].

¹⁴¹ Order at 7, *Carpenter v. McDonald's Corp.* No. 1:21-cv-02906 (N.D. Ill. Jan. 13, 2022).

waiting to submit a motion for summary judgement.¹⁴²

The major challenge related to the ultimate use construction of “scan of . . . face geometry” is that it relies on corporate responsibility to ensure that those employing these technologies be truthful about the algorithms they employ and the potential for identification that their algorithms create. However, realistically, we likely cannot rely on companies to be forthright about these issues.¹⁴³ In light of this challenge, academics, lawyers, and technologists need to begin collaborating and engaging with the distinctions among facial analysis technologies and creating resources to educate judges and the legislators on this important topic. While this note is a step in that direction, further knowledge sharing is needed to ensure that “scan of . . . face geometry” under BIPA is construed properly.

Further, these issues are not limited to facial analysis alone. Many of the privacy dangers inherent in facial analysis technologies will likely parallel the technologies that capture the other biometric identifiers listed under BIPA—retina or iris scan, fingerprint, voiceprint, and scan of hand geometry.¹⁴⁴ As those technologies continue to develop and become more sophisticated, it will be vital to begin thinking about the nuances of identification potential across those technologies as well and how BIPA’s terms should be interpreted to address the unique privacy risks those biometrics pose.

CONCLUSION

Facebook’s recently renamed parent company, Meta, announced in November 2021 that it has shut down its facial analysis system, deleting the facial templates of more than one billion users.¹⁴⁵ While this change may signal

¹⁴² See Jason Hegland, *The Cost of Discovery and Summary Judgement Motions*, STANFORD LAW SCHOOL BLOGS: STANFORD SECURITIES LITIGATION ANALYTICS (June 13, 2018), <https://law.stanford.edu/2013/06/18/sla-2013-06-18-the-cost-of-discovery-and-summary-judgment-motions/> [<https://perma.cc/B6NG-7J2Q>] (noting that in securities class actions, cases that settle: prior to the judge’s ruling on the first motion to dismiss will settle at \$23.3 million on average; at some point during the discovery process but before any motions for summary judgment are filed will settle for approximately \$42 million, on average; after the motion for summary judgement are filed will settle for approximately \$63 million; and once a summary judgment motion is denied will settle at \$120 million).

¹⁴³ See e.g., Corin Faife, *ID.me Does Use Facial Recognition to Match Against Database, CEO Admits*, THE VERGE (Jan. 26, 2022), <https://www.theverge.com/2022/1/26/22903437/id-me-facial-recognition-databases-irs-match> [<https://perma.cc/ZG78-YYW3>] (describing how facial recognition company contracted by the IRS described its tool as a facial authentication tool using 1-to-1 matching, but later admitted that the description was false and that the tool performs facial identification using 1-to-many matching).

¹⁴⁴ See 740 ILL. COMP. STAT. ANN., 14/10 (2008).

¹⁴⁵ Jermone Pesenti, *An Update on our Use of Face Recognition*, META (Nov. 2, 2021), <https://about.fb.com/news/2021/11/update-on-use-of-face-recognition/> [<https://perma.cc/PC7W-K65Q>].

companies are turning a new leaf and taking the privacy risks associated with facial analysis seriously, the change only came after extreme public pressure and the company's \$650 million settlement in a BIPA case.¹⁴⁶ This cessation comes after many privacy scholars have raised concerns about facial analysis technology and called for its ban altogether,¹⁴⁷ and after other major companies have pledged not to develop or research facial analysis technology.¹⁴⁸ Hoping that companies themselves will cease the use of facial analysis technology altogether or that regulators will get their act together to federally ban the technology, however, is wishful thinking. The reality is that facial analysis likely will never be totally banned¹⁴⁹ or thrown out voluntarily by

¹⁴⁶ Kashmir Hill & Ryan Mac, *Facebook, Citing Societal Concerns, Plans to Shut Down Facial Recognition System*, N.Y. TIMES (Nov. 2, 2021), <https://www.nytimes.com/2021/11/02/technology/facebook-facial-recognition.html> [<https://perma.cc/6SYZ-WWJ8>].

¹⁴⁷ See Woodrow Hartzog, *Facial Recognition is the Perfect Tool for Oppression*, MEDIUM (Aug. 2, 2018), <https://medium.com/s/story/facial-recognition-is-the-perfect-tool-for-oppression-bc2a08f0fe66> [<https://perma.cc/KVN6-4L9T>] (proposing a ban on use of facial recognition technology outright); see also Barrett, *supra* note 25, at 275-83 (calling for a comprehensive ban of facial recognition technologies, especially for children). But see Judith Donath, *You are Entering an Ephemeral Bio Allowed Data Capture Zone*, MEDIUM (July 23, 2018), <https://medium.com/@judithd/you-are-entering-an-ephemeral-bioallowed-data-capture-zone-5ecafd2dbdaf> [<https://perma.cc/Q5M6-5VWX>] (arguing that facial recognition technology should be regulated, not banned).

¹⁴⁸ See Jay Peters, *IBM Will No Longer Offer, Develop, or Research Facial Recognition Technology*, THE VERGE (June 8, 2020, 8:49 PM) <https://www.theverge.com/2020/6/8/21284683/ibm-no-longer-general-purpose-facial-recognition-analysis-software> [<https://perma.cc/PR6T-TDD5>]; see also Karen Weise, *Amazon Indefinitely Extends a Moratorium on the Police Use of its Facial Recognition Software*, N.Y. TIMES (May 18, 2021, last updated Aug.

1, 2021) <https://www.nytimes.com/2021/05/18/business/amazon-police-facial-recognition.html> [<https://perma.cc/A7K8-FBMR>]; Nick Statt, *Microsoft Won't Sell Facial Recognition to Police Until Congress Passes New Privacy Law*, THE VERGE (June 11, 2020, 2:01 PM), <https://www.theverge.com/21288053/microsoft-facial-recognition-police-law-enforcement-pledge-regulation> [<https://perma.cc/FR7Y-4URN>].

¹⁴⁹ Note, however, that currently 2 cities (Baltimore, MD and Portland, OR) have banned the use of the technology by private businesses. Further, 2 states (Virginia and Vermont) and 20 cities (Alameda, CA; Berkeley, CA; Boston, MA; Brookline, MA; Cambridge, MA; Jackson, MS; King County, WA; Madison, WI; Minneapolis, MN; New Orleans, LA; Northampton, MA; Oakland, CA; Pittsburgh, PA; Portland, ME; Portland, OR; San Francisco, CA; Somerville, MA; Springfield, MA; Teaneck, NJ; and Worcester, MA) have banned the use of facial analysis by law enforcement. See BAN FACIAL RECOGNITION, <https://www.banfacialrecognition.com/map/> [<https://perma.cc/XBF2-6GGV>] (last visited April 13, 2022). But see Alfred Ng, *Police Say They Can Use Facial Recognition, Despite Bans*, THE MARKUP (Jan. 28, 2021) <https://themarkup.org/news/2021/01/28/police-say-they-can-use-facial-recognition-despite-bans> [<https://perma.cc/2AJE-T452>] (identifying loopholes in some of these bans that still allow police to use facial recognition through

all companies due to its increasingly lucrative nature,¹⁵⁰ despite consumer distrust in the technology and in its uses commercially.¹⁵¹

Regulation governing the use of the technology and mitigating its privacy harms, like BIPA, is the realistic way our society will have to deal with facial analysis technology as it continues to be part of our everyday lives. In such regulation, it is vital that balance is struck to ensure that the technologies can both be utilized for good and be respectful of privacy norms. The standard proposed in this paper recognizes the rising levels of corporate responsibility that companies have begun to take on, as technology companies have become more conscientious about the privacy implications of the technologies or features they deploy, while at the same time acknowledges that regulation is still needed to ensure that companies do not abuse their power with such technology to violate individual privacy.

As we wait for the courts to determine the scope of “scan of . . . face geometry,” companies will continue to deploy facial analysis technologies and fight class action lawsuits for alleged privacy harms under BIPA.¹⁵² To ensure innovation in the facial analysis market and in health research and to protect individual privacy, “scan of . . . face geometry” should be reasonably construed to include data generated from a facial analysis technique that could be used to identify an individual, excluding data that alone could not be used to identify an individual in the image. While future federal regulation of facial analysis technology may be on the horizon, BIPA alone will not suffice as protection against facial analysis abuses; however, it can be construed to

state and federal agencies or the private sector).

¹⁵⁰ See Zack Whittaker, *Despite Controversies and Bans, Facial Recognition Startups are Flush with VC Cash*, TECHCRUNCH (July 26, 2021), <https://techcrunch.com/2021/07/26/facial-recognition-flush-with-cash/>. [https://perma.cc/6B5A-ZXXB].

¹⁵¹ See Aaron Smith, *More than Half of U.S. Adults Trust Law Enforcement to Use Facial Recognition Responsibly*, PEW RESEARCH CENTER (Sept. 5, 2019), <https://www.pewresearch.org/internet/2019/09/05/more-than-half-of-u-s-adults-trust-law-enforcement-to-use-facial-recognition-responsibly/> [https://perma.cc/ZLK8-NX3N] (finding of 4,272 Americans adults surveyed, 36% said they trusted technology companies and 18% said they trusted advertisers to use facial recognition technologies responsibly, as compared with the 56% that said they trusted law enforcement agencies to use facial recognition technologies responsibly).

¹⁵² See Lauraann Wood, *Microsoft Hit With BIPA Suit Over Photo App's Facial Scans*, LAW360 (Mar 26, 2022), <https://www-law360-com.ezproxy.bu.edu/articles/1497504/microsoft-hit-with-bipa-suit-over-photo-app-s-facial-scans> [https://perma.cc/SBV9-KYLH]; see also Hayley Fowler, *J&J Unit Hit with BIP Suit Over Skin Care App's Face Scans*, LAW360 (May 26, 2022), https://www-law360-com.cybersecurity-privacy/articles/1497471/j-j-unit-hit-with-bipa-suit-over-skin-care-app-s-face-scans?nl_pk=a4f59acb-363d-4947-8f60-fed938423ffd&utm_source=newsletter&utm_medium=email&utm_campaign=cybersecurity-privacy&utm_content=2022-05-27 [https://perma.cc/MW4J-AH43].

offer strong privacy protections in the meantime without doing away with the technology completely, providing companies, researchers, and consumers with what all they desire.

NOTE

THE UPC AND PATENT TROLLS: WILL THE NEW FORUM BE PATENT-FRIENDLY ENOUGH TO DRAW LITIGATION FROM OTHER FORUMS?

JAKE OTTERBEIN

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INTRODUCTION

The basic principles and policy behind the United States patent system are grounded in the Constitution—in the Intellectual Property Clause. “Congress shall have power . . . to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.”¹ The idea that patent law should be used to promote rather than chill innovation has permeated throughout the history of the U.S. While granting a limited monopoly over inventions within the scope of the patent,² the patent system forces innovators to invent around patented inventions, thus furthering the state of the art of the technology.

There are a number of benefits of obtaining a patent. First, a U.S. patent grants the owners an exclusive right to manufacture, use, sell, offer for sale, or import the technology covered by the patent.³ This limited monopoly granted by the patent allows patent holders the exclusive commercial benefit of their patented invention.⁴ Because this right is licensable and transferrable,⁵ it provides a solid commercial benefit through the licensing and transfer of the rights that the patent grants. Similarly, a patent allows the holders to assert their rights against any alleged infringers of their intellectual property.⁶ By asserting their rights, patent owners can obtain damages from or injunctions against patent infringers in the courts or alternative dispute venues and can put pressure on the infringer to settle into a licensing agreement.⁷

However, the patent systems in both the United States and in Europe suffer from abuse from what are known as non-practicing entities (NPEs).⁸ NPEs

¹ U.S. CONST. art. 1, § 8, cl. 8.

² Emily G. Blevins, CONG. RSCH. SERV., R47267, PATENTS AND INNOVATION POLICY 4 (2022).

³ 35 U.S.C. § 154(d)(1)(A). Patent rights, however, are territorially limited. *See* 35 U.S.C. § 154(B).

⁴ *See* Blevins, *supra* note 2, at 2 (“Congress has enacted patent laws that grant inventors the exclusive right to the make, use, import, sell or offer for sale their inventions for a set period . . .”).

⁵ *See* 35 U.S.C. § 261 (“[P]atents shall have the attributes of personal property.”).

⁶ *See* 35 U.S.C. § 271(b).

⁷ *See* 35 U.S.C. §§ 283-285.

⁸ Stefania Fusco, *Markets and Patent Enforcement: A Comparative Investigation of Non-Practicing Entities in the United States and Europe*, 20 MICH. TELECOM. & TECH. L. REV. 439, 442 (2014).

are entities that obtain patents either through filing with the Patent Offices or purchasing them from other patent holders, but that do not practice the inventions covered by the patents.⁹ NPEs sit on patents without manufacturing, using, or selling any embodiments of the covered inventions.¹⁰ Many NPEs participate in “trolling” behavior, in which they obtain and assert their rights to the patents for the sole purpose of getting a payout from potential infringers—generally targeting larger corporations with a large cash revenue.¹¹

Trolling NPEs are a huge issue in both the U.S. and the European Union. In 2014, *Harvard Business Review* estimated that NPEs and patent trolling behaviors cost defendant firms 29 billion dollars per year in the U.S.¹² Meanwhile, the aggregate cost of patent litigation was only about 60 billion per year.¹³ NPEs and patent trolling behavior make up almost half of the total annual patent litigation costs in the U.S.¹⁴ The NPE problem seems to be more pervasive in the U.S. than it does in European jurisdictions.¹⁵ In 2017, while NPEs accounted for just under half of the patent litigation in the U.S., NPEs accounted for only about 13 percent of the patent litigation in Europe.¹⁶

However, an interesting trend in the increase in NPE patent litigation can be seen between 2010 to 2014. Prior to 2014, the percentage of patent litigation in the U.S. taken up by NPEs steadily increased until it hit around 55 percent.¹⁷ Since then, it has hovered around 50 percent.¹⁸ In Europe, prior to 2014, the percentage of patent litigation taken up by NPEs bounced between four and six percent before skyrocketing to almost 14 percent in 2014, after which it stayed between 12 and 14 percent.¹⁹ These trends are interesting because the European Union signed the Unified Patent Court Agreement (“the Agreement”) in 2013.²⁰

⁹ NON-PRACTICING ENTITY (NPE), Westlaw 4-513-0928 (last visited Jan. 7, 2022).

¹⁰ *See id.*

¹¹ Larry Downes, *The U.S. Supreme Court Is Reining in Patent Trolls, Which Is a Win for Innovation*, HARV. BUS. REV. (Jun. 2, 2017) [hereinafter *Reining in Patent Trolls*], <https://hbr.org/2017/06/the-u-s-supreme-court-is-reining-in-patent-trolls-which-is-a-win-for-innovation> [<https://perma.cc/R75P-JHQF>].

¹² James Bessen, *The Evidence Is In: Patent Trolls Do Hurt Innovation*, HARV. BUS. REV. (Nov. 2014) [hereinafter *The Evidence Is In*], <https://hbr.org/2014/07/the-evidence-is-in-patent-trolls-do-hurt-innovation> [<https://perma.cc/4JVE-Q3K5>].

¹³ *Id.*

¹⁴ *Id.*

¹⁵ Valerio Sterzi et al., *Non-Practicing Entities and Transparency in Patent Ownership in Europe*, BORDEAUX ECONOMICS WORKING PAPERS, at 5 (June 2010).

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Council Agreement on a Unified Patent Court*, art. 1, 2013 O.J. (C 175) 1.

The Agreement forms the foundation of establishing the Unified Patent Court (UPC) in the European Union and supports the creation of “unitary” patents.²¹ The UPC is a single court system for patent litigation cases brought in any signing Member State of the Agreement.²² Unitary patents are patents that grant patent rights in all signing Member States of the Agreement and build upon their European patent predecessor.²³ The correlation of an NPE spike in Europe and a plateauing of NPE litigation in the U.S. in 2014 may indicate that the Agreement is incentivizing NPEs to focus on Europe, not U.S., based corporations.

While some of the Agreement’s components have begun to be implemented, the actual UPC has only recently been established and entered into force on June 1, 2023²⁴ The Agreement requires thirteen E.U. Member States to ratify it and must include France, Germany, and Italy.²⁵ As of October, 2024, 18 states have ratified the Agreement.²⁶ With the imminent enforcement of the UPC as the foundation, this article will take a comparative look at different international jurisdictions for patent litigation to predict whether the establishment of the UPC will draw patent litigation and trolling behavior out of the U.S.

The article is organized as follows. Part I will discuss patent litigation in the U.S. and Europe generally, with a focus on the procedure. Part II will look at certain factors that make jurisdictions and courts plaintiff friendly and appeal to trolling NPEs. Part III will outline some of the general rules and procedures for the UPC as written in the Agreement and the changes the Agreement makes to the European patent system. Finally, part IV will compare the jurisdictions and patent systems to predict whether NPEs will be drawn to Europe by the UPC. This article just brushes the surface of the complexities of international patent litigation. Focusing mainly on situations involving NPEs, this article is limited in scope to entities with a global patent

²¹ *See id.* at 1-2.

²² *Id.* at 1. Jurisdiction is specifically limited to infringement and invalidity actions rather than ownership disputes. *Id.*

²³ *Unitary Patent*, EUR. PAT. OFF., <https://www.epo.org/law-practice/unitary/unitary-patent.html> [<https://perma.cc/KYP3-JVYH>] (last visited Oct. 17, 2021).

²⁴ Hans Ullrich, *The Unified Patent Court*, Yearbook of European Law 135-168 (Nov. 11, 2023).

²⁵ *Council Agreement on a Unified Patent Court*, *supra* note 20, at 22. It was previously required that England be required to ratify but, post-Brexit, Italy has replaced it. *See The Unified Patent Court after Brexit*, JURI COMM. (Mar. 2020), [https://www.europarl.europa.eu/RegData/etudes/ATAG/2020/649575/IPOL_ATA\(2020\)649575_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2020/649575/IPOL_ATA(2020)649575_EN.pdf) [<https://perma.cc/LEQ6-3W2U>]; UPC Member States, UNIFIED PATENT COURT (Oct. 25, 2024) [<https://perma.cc/JC32-WP34>].

²⁶ *The Provisional Application Phase and the UPC’s Expected Timeline*, UNIFIED PATENT COURT (Apr. 6, 2022), <https://www.unified-patent-court.org/news/provisional-application-phase-and-upcs-expected-timeline> [<https://perma.cc/C36Y-X8FH>]; UPC Member States, UNIFIED PATENT COURT (Oct. 25, 2024) [<https://perma.cc/JC32-WP34>].

portfolio looking for a single forum to bring litigation. That includes situations in which the entity is looking for a forum to bring litigation in first, in preparation of bringing litigation elsewhere later. It is also limited to normal patent situations rather than covering topics like standard essential patents and patentees looking solely for injunctive relief.

PATENT LITIGATION IN THE U.S. AND EUROPE

The U.S.

Patent litigation in the U.S. can vary significantly from jurisdiction to jurisdiction. These changes can affect everything from the discovery capabilities of the parties, the cost of litigation, and the incentive to settle out of court. While patent litigation can vary considerably, every jurisdiction's litigation process includes the same basic elements.

Generally, patent litigation in the United States takes about two to two-and-a-half years.²⁷ Some jurisdictions like the Eastern District of Virginia are known to be faster,²⁸ whereas some like the District of Massachusetts tend to be slower.²⁹ Litigation includes the initial and pre-hearing conferences dictated by the Federal Rules of Civil Procedure, the *Markman* hearing, discovery, and trial. Different courts also add certain elements to the conferences via patent local rules and standing orders, but these will be discussed later.

The Markman Hearing

Also called the claim construction hearing, the *Markman* hearing is the place where litigants argue over the scope of the patent claims.³⁰ It is generally separated from trial to enhance judicial efficiency and to reduce jury confusion.³¹ However, U.S. courts handle the placement of the *Markman* hearing differently. Some schedule soon after plaintiffs file the complaint, because most evidence used is in the patent and can be determinative to the outcome of the litigation.³² Others schedule it months after the filing of the complaint to allow for discovery and preparation of expert witnesses that

²⁷ *2016 Patent Litigation Study*, PWC (May 2016), <https://www.pwc.com/us/en/forensic-services/publications/assets/2016-pwc-patent-litigation-study.pdf>.

²⁸ J. Jonas Anderson, *Court Competition for Patent Cases*, 163 U. PA. L. REV. 631, 656 (2015). While NPEs tend to like faster litigation, the Eastern District of Virginia is easy to transfer out of, making it less desirable to NPE plaintiffs.

²⁹ Safraz Ishmael & Kimberly Li, *New Local Patent Rules May Speed Up Patent Litigation In Massachusetts*, PROSKAUER ROSE LLP, (Jun. 27, 2018) <https://www.proskauer.com/blog/new-local-patent-rules-may-speed-up-patent-litigation-in-massachusetts> [<https://perma.cc/4UCA-WVPC>]; See Anderson, *supra* at 657.

³⁰ MARKMAN HEARING, Westlaw 3-514-7689 (last visited Apr. 14, 2022).

³¹ *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 391 (1996).

³² KIMBERLY A. MOORE, TIMOTHY R. HOLBROOK & JOHN F. MURPHY, *PATENT LITIGATION & STRATEGY* 329 (5th ed. 2017).

parties plan to use during the hearing.³³

Either way, the *Markman* hearing is vital to U.S. patent litigation. Determining the scope of the claims is essential to understanding what is covered by the patent. Plaintiffs argue for a broader scope and coverage, whereas defendants try to limit scope to keep their product from falling within the patent's boundaries. While the plain meaning of the claims is the primary source for determining the scope of the claim, judges are allowed to look to the patent as a whole, including the specification and drawings, industry dictionaries or other defining texts, and expert testimony.³⁴ In many cases, the *Markman* hearing determines the outcome of litigation.³⁵

Trial

Trials are conducted before a judge and usually a jury, as many of the components of a patent case are mixed questions of fact and law.³⁶ Both infringement and invalidity arguments can be heard in the same proceeding.³⁷ Procedurally, trial tends to favor plaintiffs. First, plaintiffs can easily frame a patent infringement case in a way that turns the jury against the defendant—i.e., stealing intellectual property.³⁸ Second, in relation to the invalidity defense, patents are presumed valid.³⁹ The burden falls onto the defendant to prove their anticipation or obviousness defense with the “clear and convincing” standard.⁴⁰

Remedies

The two main remedies for patent infringement are injunctions and damages. For injunctions, courts have the ability to grant injunctions based on normal principles of equity.⁴¹ Courts look to: (1) irreparable injury, (2) inadequate remedies at law, (3) a balance of hardships, and (4) public interest.⁴² Damages can include lost profits and reasonable royalties and is generally a

³³ *Id.*

³⁴ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-14 (10th Cir. 2005) (noting that plain meaning is determined from the perspective of a person of ordinary skill in the art).

³⁵ Mark Malek, *Markman Exposed: Continuing Problems with Markman Hearings*, 7 *Univ. of Fla. J. Tech. L. & Pol'y* 195, 218.

³⁶ *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966) (noting that invalidity for obviousness is a question of law based on a series of questions of fact).

³⁷ 35 U.S.C. § 282.

³⁸ MOORE, *supra* note 32, at 146 (“It is important for the defendant to attempt to negate the impression of theft of the patented technology if confronted with a jury trial demand.”).

³⁹ 35 U.S.C. § 282.

⁴⁰ *Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 95 (2011).

⁴¹ 35 U.S.C. § 283.

⁴² *eBay v. MercExchange L.L.C.*, 547 U.S. 388, 391 (2006).

question for the jury.⁴³ Damages found by the jury can also be trebled at the judge's discretion.⁴⁴

Substantive Law

The substantive patent law tends to favor the patentee or plaintiff. First, there is a presumption of validity of the patent that the defendant must rebut with clear and convincing evidence.⁴⁵ Second, claim construction in the U.S. relies first on the plain meaning of the words in the claim.⁴⁶ However, inventors to be their own lexicographer and clearly define words in the specification.⁴⁷ Finally, courts apply a relatively broad doctrine of equivalents using the triple identity test to determine if an embodiment of a limitation is equivalent to the patented limitation.⁴⁸ All of these favor the plaintiff by either placing the burden on the defendant or broadening the available scope of the patent.

Europe

Currently in Europe, there are two separate patent systems: (1) the national patent system, where patents are granted in a single country; and (2) the European patent system, where patents are granted in all countries elected in the patent.⁴⁹ There is also the Patent Cooperation Treaty (PCT), which allows for international patents similar to European patents within the European Patent Convention states, but each national or regional part of the patent is generally litigated separately.⁵⁰ For sake of brevity, national patents will only be discussed in the context of France, Germany, and Italy—the countries with the largest number of patents in effect in 2012.⁵¹

European patents are patents filed with and examined by the European Patent Office, rather than having to file parallel applications in each country where protection is sought.⁵² However, European patents must be validated

⁴³ 35 U.S.C. § 284.

⁴⁴ *Id.*

⁴⁵ *See* 35 U.S.C. § 282; *Microsoft*, 564 U.S. at 95.

⁴⁶ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-14 (10th Cir. 2005).

⁴⁷ *Id.* at 1316.

⁴⁸ *Graver Tank & Mfg. v. Linde Air Prods.*, 339 U.S. 605, 608 (1950) (noting that the triple identity test asks whether the accused device limitation performs substantially the same function in the substantially same way for substantially the same result).

⁴⁹ Convention on the Grant of European Patents, arts 2, 66, Oct. 5, 1973, 1065 U.N.T.S. 199

⁵⁰ *Summary of the Patent Cooperation Treaty (PCT) (1970)*, Summary of the Patent Cooperation Treaty (PCT) (1970) (wipo.int) [<https://perma.cc/7LMT-HWWH>].

⁵¹ *European Patent Application: Country Profiles*, EUR. PAT. OFF. (2021), <https://www.epo.org/about-us/annual-reports-statistics/statistics/2021/statistics/patent-applications.html#tab5> [<https://perma.cc/2RLR-ERS8>]

⁵² *See Unitary Patent*, *supra* note 23.

and maintained individually in each country where they take effect.⁵³ Prior to the establishment of the UPC, there was no central European court that has competence over European patents and thus, each national part of the European patent was generally litigated separately.⁵⁴

Jurisdiction

The Brussels Ia Regulation and the Lugano Convention determine the jurisdiction of patent cases.⁵⁵ Courts may exercise general or special jurisdiction over a defendant.⁵⁶ General jurisdiction is governed by where the defendant is domiciled, which is determined by the law of the Member State in which the case was brought.⁵⁷ International corporations are generally domiciled in the country where they have their statutory seat (or place of incorporation or registered office), central administration, or principal place of business.⁵⁸

There are a number of grounds for special jurisdiction outlined within the Brussels Regime. Courts have special jurisdiction in the place where the harmful event caused by the infringement occurred. If there are multiple defendants, courts have special jurisdiction in a place where one defendant maintains a close connection, and in disputes arising out of the operation of a corporate branch, subsidiary or other establishment.⁵⁹ However, the Court of Justice of the European Union (CJEU) has consistently held that courts in the place where the harmful event occurred “are usually the most appropriate for deciding the case.”⁶⁰ This is especially relevant in cases, where international corporations are selling the infringing device throughout Europe. It is important to note the distinction between the “place of damage” (where the right is registered or validated) and the “place of action” (the place where the event giving rise to the damage occurred).⁶¹ Courts at the place of damage have jurisdiction only with respect to the harm caused within that state, whereas courts in the state of action have jurisdiction over all the consequences of the acts.⁶² The places where an infringer commits international acts, like international sales and deliveries or internet advertisements

⁵³ *Id.*

⁵⁴ EUR. PAT. ACADEMY, THE JURISDICTION OF EUROPEAN COURTS IN PATENT DISPUTES, 3 (2022) [hereinafter JURISDICTION].

⁵⁵ *Id.* at 9.

⁵⁶ *Id.* at 7.

⁵⁷ Regulation 1215/2012, of the European Parliament and of the Council of 12 December 2012, arts. 4, 62, 2012 O.J. (L 351) 7. 3, 18.

⁵⁸ *Id.* at art. 63, 18.

⁵⁹ JURISDICTION, *supra* note 54, at 15.

⁶⁰ Case C-133/11, Folien Fischer v. Ritrama, ECLI:EU:C:2012:664, ¶ 38 (Oct. 25, 2012).

⁶¹ JURISDICTION, *supra* note 54, at 15.

⁶² *See* Case C-68/93, Shevill v. Presse Alliance SA, 1995 E.C.R. 1-462. However, *Shevill* was originally a defamation case that was later applied to trademarks and copyright; it has yet to be confirmed by the CJEU for patents.

accessible in other countries, are considered to be places of action by the CJEU.⁶³

Special jurisdiction can also arise from the ability to sue multiple defendants in one Member State where a single one of those defendants is domiciled.⁶⁴ The claims must be “so closely connected that it is expedient to hear and determine them together to avoid the risk of irreconcilable judgments.”⁶⁵ This may lead to forum shopping in a case where there are many distributors of an infringing device. However, complexities arise in the case of European patents where different defendants infringe on different parts of the same patent.⁶⁶ Because each infringement of a European patent is dealt with nationally, infringement of different parts in different countries will not lead to irreconcilable judgments.⁶⁷ This key issue prevents parent companies from being joined with its subsidiaries.⁶⁸

While limited, the current European Union rules allow for plaintiffs to have to a choice between jurisdictions.

National Patents

One of the main motivations behind creating the UPC has been to unify the patent system throughout Europe and to reduce the burden on inventors stemming from the complexity of navigating the different jurisdictions within Europe.⁶⁹ The way courts treat patent cases can vary substantially from country to country in both procedure and substance.

However, certain aspects are common to across European jurisdictions. Namely, no patent case in Europe is tried by a jury; instead, the judge or panel of judges try the case completely.⁷⁰ Discovery in European countries is either limited or nonexistent, which cuts down on litigation time and cost.⁷¹ However the plaintiffs are required to gather evidence through other means.⁷²

France

Patent litigation in France appears very plaintiff friendly. All patent litigation matters arising in France fall under the special jurisdiction of the *Tribunal de grande instance de Paris* (the Judicial Court of Paris) and the Paris

⁶³ See JURISDICTION, *supra* note 54, at 15.

⁶⁴ Regulation 1215/2012, *supra* note 57, art. 8, 8.

⁶⁵ *Id.*

⁶⁶ Case C-539/03, Roche Nederland v. Primus, ECLI:EU:C:2006:458, ¶¶ 27-34 (Jul. 13, 2006).

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ Council Agreement on a Unified Patent Court, *supra* note 20, at 1.

⁷⁰ JOSEPH CASINO & MICHAEL KASDAN, PATENT LITIGATION: MAPPING AND GLOBAL STRATEGY (2022), Westlaw 7-521-8726.

⁷¹ *Id.*

⁷² *Id.*

Court of Appeal.⁷³ While the three-judge panel has no technical or scientific training, the judges deal exclusively with intellectual property related cases, and the court has the power to appoint experts.⁷⁴ Generally, patent litigation in France takes between eighteen to twenty-four months for the first instance proceeding.⁷⁵

One major action that swings the French court in the plaintiffs' favor is the *saisie-contrefaçon*, a powerful *ex parte* probative tool.⁷⁶ If a claimant does not already have important evidence in its possession, the court can grant an order of *saisie-contrefaçon* as a means of obtaining evidence that heavily favors the patentee such as the inspection of the defendant's premises.⁷⁷ In comparison, plaintiffs in the U.S. are required to obtain evidentiary support to form the basis of their complaint or make factual contentions that will likely have evidentiary support after discovery.⁷⁸ In order to get a *saisie-contrefaçon*, the claimant only needs to show that they have standing, the patent is in force, and "reasonably available evidence of infringement."⁷⁹ By implementing the *saisie-contrefaçon* action, France opens the door for plaintiffs to more easily obtain evidence in their favor. This makes France a desirable forum for plaintiffs because the evidence obtained with a *saisie-contrefaçon* can be used in parallel proceedings in other jurisdictions.⁸⁰

Substantively, France has one of the broadest interpretations of the doctrine of equivalents in Europe.⁸¹ Similarly, file wrapper estoppel is not applied under French law.⁸² By applying the doctrine of equivalents broadly and the lack of file wrapper estoppel, the scope of the claims in the patent proportionally increases and grants more protection over the covered invention as the claim interpretation is not limited to the exact technical implementation or estoppel.

France allows for civil and criminal penalties.⁸³ These include damages, fines, injunctions, confiscation and seizure, and recall and removal from the

⁷³ EUROPEAN PATENT ACADEMY, PATENT LITIGATION IN EUROPE, 57 (5th ed. 2019) [hereinafter PATENT LITIGATION].

⁷⁴ *Id.*

⁷⁵ Pauline Debré & Jean-François Merdrignac, *The Patent Litigation Law Review: France*, THE LAW REVIEWS, (Nov. 1, 2022), <https://thelawreviews.co.uk/title/the-patent-litigation-law-review/france>.

⁷⁶ *Id.*

⁷⁷ *See id.*

⁷⁸ FED. R. CIV. P. 11(b)(3).

⁷⁹ *See* Debré & Merdrignac, *supra* note 75.

⁸⁰ *Id.*

⁸¹ SABINE AGE & EDDY PROTHIERE, PATENT LITIGATION IN FRANCE: OVERVIEW (2006), Westlaw 5-622-0668. The doctrine of equivalents in France requires only the same function in view of the same result. *See* Debré & Merdrignac, *supra* note 75.

⁸² Debré & Merdrignac, *supra* note 75.

⁸³ PATENT LITIGATION, *supra* note 73, at 57.

channels of commerce.⁸⁴ France can also grant the destruction of the infringing products.⁸⁵ For damages, the court considers lost profits, unfair profits, and non-economic factors such as moral prejudice to the right holder.⁸⁶ Punitive damages are not generally granted in France, but under reasonable royalty calculations, a court may increase the average royalty rate by up to fifty percent to compensate for the fact that the patentee was unwilling to grant a license.⁸⁷

Germany

Unlike France, which has one court with exclusive jurisdiction over patent cases, any of the twelve regional courts in Germany may hear patent infringement cases.⁸⁸ Like in the U.S., certain courts are preferred to others.⁸⁹ Dusseldorf, Mannheim, Munich, and Hamburg hear the majority of patent infringement cases.⁹⁰ Much of this likely has to do with the timing of patent litigation in each of the courts, with both Dusseldorf and Mannheim reaching decisions in less than a year.⁹¹ Each of the courts have specialist patent litigation three-judge panels, consisting of legally qualified—but not formally technically qualified—judges.⁹²

In Germany, patent infringement and patent validity claims are bifurcated.⁹³ Only the Federal Patent Court can hear invalidity claims.⁹⁴ The Revocation Chamber panel generally consists of two legal and three technical members.⁹⁵ When there is both a patent infringement case and a patent invalidity case occurring simultaneously, the regional courts have the option to stay the infringement proceedings.⁹⁶ However, they tend to hesitate to do so, allowing for a finding of infringement before the patent is invalidated, which can substantially impair the alleged infringer's commercial use of the invention.⁹⁷

As to substantive law, lower courts in Germany are only bound by

⁸⁴ *Id.* at 58.

⁸⁵ *Id.*

⁸⁶ *See* Debré & Merdrignac, *supra* note 75.

⁸⁷ Cour d'appel [CA] [regional court of appeal] Paris, civ., Jun. 27, 2017, 15/09294.

⁸⁸ CASINO & KASDAN, *supra* note 70, at 4.

⁸⁹ *See* WOLFGANG KELLENTER & HENGELER MUELLER, PATENT LITIGATION IN GERMANY: OVERVIEW (2022), Westlaw 5-622-3450.

⁹⁰ *Id.*

⁹¹ CASINO & KASDAN, *supra* note 70, at 4.

⁹² KELLENTER & MUELLER, *supra* note 89.

⁹³ PATENT LITIGATION, *supra* note 73, at 36.

⁹⁴ *See id.*

⁹⁵ *Id.*

⁹⁶ *See* CASINO & KASDAN, *supra* note 70, at 4.

⁹⁷ *Id.*

decisions of the European Court of Justice on interpretation of E.U. law.⁹⁸ While there is no other concept of binding precedent, lower courts generally follow rulings of higher courts and are required by the Federal High Court of Justice to take into account decisions of the European Patent Office or courts of European Patent Convention Member States with essentially identical issues.⁹⁹ Germany also applies the doctrine of equivalents, albeit with a more rigid three-step test.¹⁰⁰

As to remedies, Germany allows preliminary and permanent injunction, recall, removal, and destruction of the infringing product.¹⁰¹ Damages may be granted, but generally, enhanced damages are not.¹⁰²

Italy

Like Germany, Italy has a number of courts able to hear patent cases. Where a foreign party is involved, eleven courts are competent to render decisions.¹⁰³ However, similar to patent litigation in France, cases of infringement and validity heard in Italian courts are not bifurcated, and invalidity can serve as the basis of a defense.¹⁰⁴ In these cases, Italy uses a panel of three judges of legal but not technical qualification.¹⁰⁵ In most cases, the judges appoint a technical expert to give an opinion on the existence of infringement or validity.¹⁰⁶ While not bound by the expert's opinion, if the judge disagrees, they must provide a justification as to why they rejected the expert's evidence.¹⁰⁷

Substantively, Italy has a broad doctrine of equivalents.¹⁰⁸ To be liable under the doctrine of equivalents, the allegedly infringing device is only required to solve the same technical problem and be considered by those skilled in the art as a mere substitute.¹⁰⁹ As to remedies, Italy seemingly does not differ from the European norm. It allows injunctions, recall and seizure of infringing products, and damages.¹¹⁰ Damages take into account the lost profits of the patent owner, disgorgement of profits of the infringer, and

⁹⁸ KELLENTER & MUELLER, *supra* note 89.

⁹⁹ *Id.*

¹⁰⁰ Bundesgerichtshof [BGH] [Federal Court of Justice] Jun. 14, 2016, 211 ENTSCHEIDUNGEN DES BUNDESGERICHTSHOFES IN ZIVILSACHEN [BGHZ] 1.

¹⁰¹ Casino & Kasdan, *supra* note 70, at 6.

¹⁰² *Id.*

¹⁰³ Decreto legislativo 23 dicembre 2013, n.145, G.U., Dec. 23, 2013, n.300 (It.).

¹⁰⁴ PATENT LITIGATION, *supra* note 73, at 86.

¹⁰⁵ MASSIMO STERPI & FRANCESCA FOSSON, PATENT LITIGATION IN ITALY: OVERVIEW (2022), Westlaw 4-621-2485.

¹⁰⁶ PATENT LITIGATION, *supra* note 73, at 85.

¹⁰⁷ *Id.*

¹⁰⁸ See Sterpi & Fosson, *supra* note 105.

¹⁰⁹ *Id.*

¹¹⁰ PATENT LITIGATION, *supra* note 73, at 86.

reasonable royalties.¹¹¹

PLAINTIFF FRIENDLY FACTORS

The main goals of NPEs during litigation are to expedite the litigation process, decrease costs, and have more certain and predictable outcomes to spur settlement negotiations.¹¹² As in any type of litigation, different jurisdictions treat patent cases differently. While the U.S. federal district courts have jurisdiction over all cases “arising under” patent law in the U.S. and generally try to create a uniform body of patent law within the U.S., different courts have different rules, procedures, and backgrounds that can affect the outcome of litigation.¹¹³ This section will look at the plaintiff’s ability to forum shop and will subsequently examine some of the factors that make a court more plaintiff friendly and appealing to trolling NPEs.

Forum Shopping

Forum shopping is a major factor in a patent litigation plaintiff’s decision to sue an infringer. As in other litigation, plaintiffs decide when and where to bring a patent suit.¹¹⁴ Plaintiffs generally have a greater ability to forum shop in the U.S. than they do in Europe, due to the nature of the U.S. federal district court system. In either case, NPEs can exploit forum shopping by choosing the court that is the fastest, most cost-effective, or most likely to motivate settlement.

Forum Shopping in the United States – The Patent Venue Statute

In the U.S., for a court to have jurisdiction over a case, it must have jurisdiction over the parties and subject matter involved in the case. Personal jurisdiction in patent cases is the same as in other civil cases and generally requires minimum contacts with the forum.¹¹⁵ Subject matter jurisdiction is granted to the federal district courts for any cases “arising under any Act of Congress relating to patents.”¹¹⁶

Patent litigation cases also require proper venue. The patent venue statute reads: “[a]ny civil action for patent infringement may be brought in the judicial district where the defendant resides, or where the defendant has committed acts of infringement and has a regular and established place of business.”¹¹⁷ In recent years, the Supreme Court has reinterpreted the patent

¹¹¹ *Id.*

¹¹² See MOORE, *supra* note 31, at 93-94.

¹¹³ 28 U.S.C. § 1338.

¹¹⁴ MOORE, *supra* note 31, at 89-90.

¹¹⁵ *International Shoe Co. v. Washington*, 326 U.S. 310, 316 (1945) (finding that service of process within the State is enough to satisfy due process).

¹¹⁶ 28 U.S.C. § 1338.

¹¹⁷ 28 U.S.C. § 1400(b).

venue statute in an attempt to inhibit trolling NPEs.¹¹⁸ Under the old interpretation of the venue statute pursuant to *VE Holding Corp. v. Johnson Gas Appliance Co.*, the term “resides” included any venue that had personal jurisdiction over the defendant.¹¹⁹ The broadly interpreted venue statute has long been the open gate allowing NPEs to troll successfully. Under the minimum contacts standard for personal jurisdiction, an NPE could bring a suit against a national corporation almost anywhere, giving them free rein to exploit the patent system for monetary gain by choosing which district’s body of law and specific procedures were most beneficial to them.¹²⁰

In 2017, however, the Supreme Court superseded *VE Holding* with the decision in *TC Heartland LLC v. Kraft Foods Group Brands LLC*.¹²¹ In an effort to combat the rampant forum shopping in patent litigation, the Supreme Court reinterpreted the patent venue statute to limit where plaintiffs could bring suit.¹²² The term “resides” was limited to a corporate defendant’s state of incorporation.¹²³ Under *TC Heartland*, a plaintiff can now bring suit against an alleged infringer: (1) in the alleged infringer’s state of incorporation, or (2) in any place the alleged infringer has infringed and has a regular and established place of business.¹²⁴ This seemed to significantly limit the venues available for NPEs to assert their patent rights.

Even so, forum shopping is still an abundant practice in patent litigation. Under the second prong of the venue statute, courts have venue where the defendant company has a regular and established place of business.¹²⁵ While the second prong is a higher standard than the minimum contacts standard for personal jurisdiction, many national and international corporations have regular and established places of business in numerous U.S. and international jurisdictions. Thus, the change to the venue statute had only a marginal effect on NPEs’ ability to forum shop in the U.S. Most noticeably, however, was the shift in patent litigation from the Eastern District of Texas—which encompassed few metropolitan areas—to the Western District of Texas—which included Austin and San Antonio.¹²⁶

¹¹⁸ See *Reigning in Patent Trolls*, *supra* note 11.

¹¹⁹ *VE Holding Corp. v. Johnson Gas Appliance Co.*, 917 F.2d 1574, 1584 (1990).

¹²⁰ See *International Shoe Co. v. Washington*, 326 U.S. 310 (1945).

¹²¹ *TC Heartland LLC v. Kraft Foods Grp. Brands LLC*, 137 S.Ct. 1514, 1515 (2017).

¹²² *Id.*

¹²³ *Id.*

¹²⁴ See 28 U.S.C. § 1400(b); *TC Heartland*, 137 S.Ct. at 1517.

¹²⁵ 28 U.S.C. § 1400(b).

¹²⁶ Ronald S. Lemieux & Steven M. Auvil, *Move Over Marshall, There’s a New Sheriff in Town—The Rise of Waco and the Western District of Texas*, *THE NAT. L. REV.* (Mar. 28, 2021) [hereinafter *Waco*], <https://www.natlawreview.com/article/move-over-marshall-there-s-new-sheriff-town-rise-waco-and-western-district-texas> [<https://perma.cc/53EN-CTVZ>].

European Forum Shopping

The current European patent system has a limited ability to forum shop. First, national patents are only effective in the countries they are granted in. Forum shopping in each European jurisdiction is limited by the number of forums available. While some European jurisdictions like Germany have regional circuits, all of which can hear patent cases, other European jurisdictions like France have one court with exclusive jurisdiction over patent cases.¹²⁷

For International (Patent Cooperation Treaty) and European patents, forum shopping is limited by the jurisdictional rules of the Brussels Regime.¹²⁸ As discussed above, a court in a particular country needs either general jurisdiction or special jurisdiction.¹²⁹ General jurisdiction does not allow for forum shopping because only the court where the defendant is domiciled has general jurisdiction.¹³⁰ However, special jurisdiction opens the door for forum shopping. The most relevant ways for a court to obtain special jurisdiction are through the place where the harm occurred and when multiple defendants are sued.¹³¹

For the former, special jurisdiction is granted in courts that are in the state of harm or the state of action.¹³² As discussed above, courts in the state of action have special jurisdiction over the entire infringement rather than just the specific harm in that state.¹³³ With international and European patents, the state of harm is found in any country the patent was granted and validated which allows for forum shopping in most E.U. countries.¹³⁴ For large, international corporation defendants, the state of action could similarly be found in many countries as they ship, advertise, and sell the goods internationally.¹³⁵ The special jurisdiction rules, while limited in scope, allow plaintiffs to forum shop for their preferred E.U. jurisdiction.

The Courts and the Patent Local Rules

As discussed above, trolling NPEs are successful in the U.S. because of their ability to forum shop. NPEs specifically prefer the Western District of Texas because it is seen as a very plaintiff friendly jurisdiction for patent litigation cases.¹³⁶ What makes Texas so plaintiff friendly? NPEs seek out forums that

¹²⁷ See PATENT LITIGATION, *supra* note 73, at 37, 57.

¹²⁸ See generally Regulation 1215/2012, *supra* note 57.

¹²⁹ See *Jurisdiction*, *supra* note 54, at 7.

¹³⁰ *Id.* at 14.

¹³¹ *Id.* at 15.

¹³² *Id.*

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ See *Waco*, *supra* note 123.

expedite the litigation process, reduce costs, and motivate the defendants to settle. The policies and procedures that the Western District of Texas implements play directly into all of those goals.

Patent Local Rules

The ways that courts procedurally handle patent litigation differs among jurisdictions. While federal District Courts must follow the Federal Rules of Civil Procedure, many courts that hear patent cases more often have adopted their own special patent local rules set out by the Chief Judge of the district.¹³⁷ These patent local rules help judges in dealing with patent cases and advertise to plaintiffs how the court handles patent cases.¹³⁸ However, these local rules also signal the courts' plaintiff friendly nature to trolling NPEs.¹³⁹ With patent local rules, litigants know exactly what they are getting themselves into and can direct their forum shopping as such.¹⁴⁰

The Northern District of California was the first District Court to promulgate patent local rules in 2000.¹⁴¹ Patent local rules provide information regarding the timeline of the patent litigation, procedural requirements like the case management conference, claim construction, and discovery timelines.¹⁴² While federal District Courts must follow the requirements of the Federal Rules of Civil Procedure, the Patent Local Rules in the Northern District of California add requirements, speed up certain procedures, and augment the Federal Rules.¹⁴³ For example, in the initial case management conference governed by Federal Rule 26(f), the Federal Rules outline the basic requirements to be discussed related to discovery.¹⁴⁴ The Northern District of California Patent Local Rules add additional requirements to the discussion including proposed modifications to following the Patent Local Rules in the case at hand, the scope and timing of claim construction discovery, and "how the parties intend to educate the court on the technology at issue."¹⁴⁵

Judge Shopping

One specific way courts differ from each other in handling patent cases is how they assign cases to judges. The Northern District of California assigns

¹³⁷ See, e.g., N.D. CAL. PATENT L. R. (2020); STANDING ORDER GOVERNING PROCEEDINGS PATENT CASES (W.D. Tex. 2021).

¹³⁸ Anderson, *supra* note 28, at 667.

¹³⁹ *Id.* at 635.

¹⁴⁰ *Id.* at 667.

¹⁴¹ *Id.* at 668.

¹⁴² *Id.*

¹⁴³ See N.D. CAL. PATENT L. R. 2-5 (2020).

¹⁴⁴ FED. R. CIV. P. 26.

¹⁴⁵ N.D. CAL. PATENT L. R. 2-1 (2020).

patent cases “off the wheel.”¹⁴⁶ The Eastern District of Virginia, assigns patent cases randomly between the Alexandria, Norfolk, and Richmond dockets.¹⁴⁷ These systems of assigning patent cases increase the unpredictability in the outcome of the case. Namely, assigning patent cases randomly creates the risk of dealing with less plaintiff friendly judges—whether due to experience with patent cases, being technological savvy, or ways in which the judges handle patent cases.¹⁴⁸

Meanwhile, prior to the *TC Heartland* decision, the Eastern District of Texas—split into six distinct divisions—modified their case assignment procedures to appeal more to patent plaintiffs.¹⁴⁹ Similar to forum shopping, the district introduced procedures that allowed what was essentially “judge shopping.”¹⁵⁰ General Orders from the Chief Judge reallocated the proportion of patent cases assigned to each judge in each division.¹⁵¹ For example, one judge would be assigned all patent cases filed in the Beaumont or Lufkin divisions.¹⁵² This procedure has also been adopted in the Western District of Texas—the post *TC Heartland* hub of patent litigation.¹⁵³ Specifically, if a patent plaintiff files in the Waco division, the case will always be assigned to Judge Albright, whose procedures tend to benefit patent plaintiffs and trolling NPEs as discussed below.¹⁵⁴ This certainty in the judicial assignment appeals to NPEs because they know what to expect going into the case and can pick a judge who is plaintiff friendly.¹⁵⁵ “Judge shopping” provides a perfect tool for NPEs to achieve their goals.

Judge Albright in the Western District of Texas

Judge shopping is effective for trolling NPEs because judges have unique ways of dealing with patent litigation cases. The Western District of Texas’s popularity could be attributed to Judge Albright. Judge Albright significantly expedites the litigation process and provides a more certain road to

¹⁴⁶ Ravi Ranganath, *Adjusting to Patent Litigation in the Northern District of California*, IPWATCHDOG (Oct. 20, 2017), <http://www.ipwatchdog.com/2017/10/20/patent-litigation-northern-district-california/id=89324/> [<https://perma.cc/W8GD-YUPC>].

¹⁴⁷ Anderson, *supra* note 28, at 658-59.

¹⁴⁸ *See id.* Specifically in the Eastern District of Virginia, Alexandria was highly experienced in patent litigation because of its proximity to the United States Patent and Trademark Office, whereas Norfolk and Richmond had significantly less experience with patent cases. *Id.*

¹⁴⁹ *Waco*, *supra* note 123.

¹⁵⁰ *Id.*

¹⁵¹ *Id.*

¹⁵² Anderson, *supra* note 28, at 672.

¹⁵³ *Waco*, *supra* note 123.

¹⁵⁴ *Id.*

¹⁵⁵ Anderson, *supra* note 28, at 667.

settlement.¹⁵⁶ First, Judge Albright believes that the presumption of validity of the patent precludes him from granting pleading stage motions for lack of patentable subject matter until after claim construction discovery.¹⁵⁷ Additionally, he rarely grants transfers outside of the Western District of Texas because Austin is a technological hub.¹⁵⁸ Judge Albright additionally issued a Standing Order Governing Proceedings for Patent Cases (the Order) that minimizes cost as a barrier for entry for many NPEs.¹⁵⁹ Specifically, the Order dictates that any discovery other than claim construction discovery cannot be done until after the *Markman* hearing.¹⁶⁰ Discovery is one of the most expensive pre-trial components of the litigation process and minimizing pre-trial costs significantly benefits a plaintiff with minimal funds.¹⁶¹ Similarly, the Order further limits the number of claims to be construed in a *Markman* hearing to ten unless there is good reason to include more.¹⁶² By limiting pre-*Markman* discovery costs, NPEs benefit from lower initial costs and generally find better settlement negotiations after the claim construction.

Timeline of Litigation, Discovery, and Litigation Costs

The timeline of litigation can have a major effect on NPE plaintiffs' choice of forum and decision to litigate. The timeline of the litigation can affect the cost and predictability of the outcome, especially in the U.S. A major component of the patent litigation timeline is the *Markman* hearing. Because there are no centralized rules governing the timing of the *Markman* hearing, they are set by each court separately.¹⁶³ If patent local rules determine when the *Markman* hearing is set, parties can still agree on a different time during the initial case management conference.¹⁶⁴

The interplay of the *Markman* hearing and discovery can have a significant effect on the cost of litigation. First, the *Markman* hearing is generally determinative.¹⁶⁵ If plaintiffs maintain a broad scope of their claim construction, it can incentivize defendants to settle in anticipation of a loss and larger award of damages at trial.¹⁶⁶ Coupled with the large cost of discovery, the timing of the *Markman* hearing is extremely important for NPE plaintiffs. If the *Markman* hearing is early, the case can be settled early or dropped early,

¹⁵⁶ *Waco*, *supra* note 123.

¹⁵⁷ *See id.*

¹⁵⁸ *Id.*

¹⁵⁹ *Id.*

¹⁶⁰ STANDING ORDER, *supra* note 137.

¹⁶¹ Moore, *supra* note 32, at 185.

¹⁶² *Waco*, *supra* note 123.

¹⁶³ Moore, *supra* note 31, at 329.

¹⁶⁴ *Id.*

¹⁶⁵ *Id.*

¹⁶⁶ *Id.* at 206.

minimizing the risk to NPE plaintiffs.¹⁶⁷ Later *Markman* hearings increase the risk to plaintiffs where the case may be determined before trial even after expending the costs on discovery.¹⁶⁸ In European jurisdictions, the cost of litigation can be significantly less than in the U.S. because many jurisdictions do not allow discovery.¹⁶⁹ European jurisdictions are consistently lower risk because of this.

Another costly factor is the ability of the court to fee shift. While this only matters for cases that get to trial, it could increase the risk for both parties. In the U.S., each party typically pays its own attorney fees.¹⁷⁰ Attorney fee shifting is up to the discretion of the judge but is generally reserved for exceptional cases.¹⁷¹ Oppositely, in Europe, attorney's fees are typically paid by the losing party.¹⁷²

The Role of Juries in Patent Cases

Many of the factors discussed above come before the trial stage. However, at the trial stage, the jury has a major effect on the outcome of the patent litigation and is a major factor in the forum shopping decision of the plaintiff. This is a significant difference compared to Europe where patent cases do not generally get a jury.

In the U.S., patent infringement is a question of fact for the jury.¹⁷³ However, different aspects of a patent infringement case are not as clear cut. Invalidity decisions can be questions of law or fact.¹⁷⁴ For example, obviousness is a question of law based on three separate questions of fact, whereas anticipation is a pure question of fact.¹⁷⁵ Similarly, claim construction is a question of law that is a main component of the question of fact that goes to the jury.¹⁷⁶ The way each of these questions of fact are framed play on the jury's sense of justice and can affect the outcome of the case.

Makeup of the Jury and the Framing of the Case

Patent cases tend to be highly robust, technical, or scientific in nature,

¹⁶⁷ *See id.*

¹⁶⁸ *See id.*

¹⁶⁹ Casino & Kasdan, *supra* note 70, at 5.

¹⁷⁰ FED. R. CIV. P. 54.

¹⁷¹ 35 U.S.C. § 285; *In re Seagate Tech., LLC*, 497 F.3d 1360, 1380 (Fed. Cir. 2007).

¹⁷² Casino & Kasdan, *supra* note 70, at 5.

¹⁷³ *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 384 (1996).

¹⁷⁴ *Compare* *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 427 (2007) (finding judges are to decide invalidity based on obviousness), *with* *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479 (1998) (“[w]hether a specification complies with the written description requirement of § 112, ¶ 1, is a question of fact. . .”).

¹⁷⁵ *KSR Int'l*, 550 U.S. at 427; *Liebel-Flarsheim Co. v. Medrad, Inc.*, 481 F.3d 1371, 1377 (2007) (stating that anticipation is a question of fact).

¹⁷⁶ *Markman*, 517 U.S. at 384.

making people question the validity of lay jury decisions in patent cases.¹⁷⁷ However, the makeup of the jury can change depending on the jurisdiction as jurors are pulled from the local area. In Boston for example, which is a biotech and pharmacy hub, it is statistically more probable that a given juror will understand a particular biotechnology than in Silicon Valley—a more high-tech region. Jurors also come into a case as a blank slate with regards to the legal standards. This is where the framing of the case becomes most important.

It is a common refrain that it is much easier to persuade someone who has no preconceived notions than it is to have someone change their mind. It is the duty of the parties' counsel to make the complex technology understandable for the average juror. Along with explaining the complex technology, counsel also frames the legal rules in the way that best supports their clients.¹⁷⁸ Patent infringement cases deal with similar technologies and fact patterns that can be framed heavily against the defendant. Stealing, copying, and misappropriating are all framings of the case that the plaintiff's counsel can use to garner sympathy for their client in the eyes of the jury, increasing the likelihood of a finding of infringement.¹⁷⁹

THE UNIFIED PATENT COURT

The Unified Patent Court (UPC) is a court that was established in the European Union on June 1, 2023, after the last required ratification—by Germany—was completed.¹⁸⁰ The UPC provides a single court system for patent litigation cases relating to European patents and unitary patents brought in any signing Member States of the Agreement.¹⁸¹ The Agreement not only establishes the UPC, but also supported the creation of “unitary” patents—a building block on the already created European patents that grant patent rights in all of the countries elected with on patent application.¹⁸² The Agreement modifies the European patent system in a way that may be more appealing to patent plaintiffs and trolling NPEs.

¹⁷⁷ Courts have invoked a “complexity exception” in some cases, where a judge can decide for themselves a complex issue of law or fact usually decided by the jury. M. Neil Browne, Nancy Kubasek & Alex Jacobs, *Juries in U.S. Patent Cases: A Comparative Portrait of the Boundaries of Democracy*, 20 N.C. J. L. & TECH. 199, 201 (2018); Jennifer Miller, *Should Juries Hear Complex Patent Cases?*, 3 DUKE L. & TECH. REV. ¶41 (2004).

¹⁷⁸ Moore, *supra* note 31, at 146.

¹⁷⁹ *Id.*

¹⁸⁰ *The Provisional Application Phase and the UPC's Expected Timeline*, UNIFIED PATENT COURT (Apr. 12, 2022), <https://www.unified-patent-court.org/news/provisional-application-phase-and-upcs-expected-timeline>; [https://perma.cc/D3LD-F7GC]; Ullrich, *supra* note 24.

¹⁸¹ *Council Agreement on a Unified Patent Court*, *supra* note 20, at 2.

¹⁸² *Unitary Patent*, *supra* note 18.

Motivation Behind the UPC

The Founding Fathers decided to protect technological innovation explicitly in the Constitution to “promote the progress of science and useful arts.”¹⁸³ As the direct predecessor to American patent law, European patent law is similarly founded on this utilitarian approach and the establishment of the UPC is no different. The Agreement demonstrates a motivation to unify the patent system and patent law within the contracting Member States. The “fragmented” patent market in the E.U. and the significant jurisdictional variations of patent law between the different countries is detrimental to innovation in the single market of the E.U. given the uncertainty and nonuniformity across different jurisdictions.¹⁸⁴ The fragmented patent market particularly affects small and medium sized businesses and inventors by providing difficulties in enforcing their patents and defending themselves against improper patents.¹⁸⁵

Many of these difficulties stem from the complexity of the inter-country systems and legal uncertainty.¹⁸⁶ The E.U. wants to enhance legal certainty with high quality decisions by improving the balance between the interests of right holders and third parties.¹⁸⁷ Even European patents can be a complex barrier for inventors to obtain and maintain the full protection over their patents.¹⁸⁸ Unitary patents are meant to reduce this complexity even further, especially in maintaining the protection after the grant of the patent.¹⁸⁹ Like most advancements in patent law, the UPC and the Agreement as a whole are motivated by the utilitarian basis of incentivizing innovation and technological advancement.

General Rules and Procedures

Establishment and Structure of the Court

The Agreement outlines the structure of the court system as having a Court of First Instance, Court of Appeals, and a Registry.¹⁹⁰ The Court of First Instance is split into central, regional, and local divisions. The central division is in Paris and a section in Munich, with local divisions in each contracting Member State upon request.¹⁹¹ Each of the central divisions are competent to

¹⁸³ U.S. CONST. art. 1, § 8, cl. 8.

¹⁸⁴ *Council Agreement on a Unified Patent Court*, supra note 20, at 1.

¹⁸⁵ *Id.*

¹⁸⁶ *See id.*

¹⁸⁷ *Id.*

¹⁸⁸ *Unitary Patent*, supra note 23.

¹⁸⁹ *Id.*

¹⁹⁰ *Council Agreement on a Unified Patent Court*, supra note 20, art. 6, 3.

¹⁹¹ *Id.* art. 7, 3. A third central division was supposed to be set up in London but following Brexit, the division needs to be relocated. *See The Unified Patent Court after Brexit*, JURI COMM. (Mar. 2020),

hear cases that fall within particular industry classifications.¹⁹² While the local divisions are subject to the rules and procedures of the Member State in which they are located, the three-judge panel of a Court of First Instance must contain one or two non-nationals depending on the number of patent cases the court hears.¹⁹³ Local divisions can request a further technically qualified judge who is an expert in the particular field implicated in the case at hand.¹⁹⁴ In contrast, the technically qualified judge is usually required in the central division.¹⁹⁵ The panel within the Court of Appeal, sitting in Luxembourg, consists of three legally qualified judges of different nationalities and two technically qualified judges assigned to the panel by the President of the Court of Appeal.¹⁹⁶

Proceedings

Proceedings in the UPC take place in five stages: written, interim, oral, damages, and costs proceedings.¹⁹⁷ The written proceeding consists of the lodging of complaints, responses, defenses, and counterclaims.¹⁹⁸ The statement of the claim and the subsequent responses require the evidence relied on, written reasoning as to why the evidence relied on constitutes infringement, non-infringement, or an asserted defense, and where appropriate, claim interpretation.¹⁹⁹ The interim proceeding prepares the court for the oral hearing.²⁰⁰ Namely, the judge-rapporteur holds a conference with the parties to help the panel of judges clear up issues, determine which facts are at issue, and possibly direct the parties towards a settlement rather than the oral hearing.²⁰¹ The oral hearing is the trial where both parties can present oral arguments to the panel of judges.²⁰² Claim interpretation can also take place at the oral hearing if requested by the parties.²⁰³ However, the oral

[https://www.europarl.europa.eu/RegData/etudes/ATAG/2020/649575/IPOL_ATA\(2020\)649575_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2020/649575/IPOL_ATA(2020)649575_EN.pdf)
[<https://perma.cc/LEQ6-3W2U>].

¹⁹² *Id.* art. 7, annex. II.

¹⁹³ *Id.* art. 8.

¹⁹⁴ *Id.*

¹⁹⁵ *Id.* The technically qualified judges are required to have a university degree, proven expertise in a field of technology, and proven knowledge of civil law and procedure relevant in patent litigation. *Id.* art. 15.

¹⁹⁶ *Id.* art. 9.

¹⁹⁷ *Id.* arts. 52, 68, 69.

¹⁹⁸ Rules of Procedure of the Unified Patent Court, 18th draft, rule 12 [hereinafter UPC Rules of Procedure].

¹⁹⁹ *Id.* rule 13.

²⁰⁰ *Id.* rule 101.

²⁰¹ *Id.* rule 104.

²⁰² *Id.* rule 112.

²⁰³ *Id.* rule 109.

hearing is to be completed within one day normally.²⁰⁴

Damages and Costs

The proceeding on damages awards is separate from the main litigation proceedings, can be initiated up to one year after the final decision, and requires a separate application.²⁰⁵ This minimizes the cost of litigation for both parties by allowing the final decision to be reached before expending funds to determine damages. The proceeding on the costs of litigation is similarly separated.²⁰⁶ Damages at the UPC can consider costs and lost profits of the patent owner, unfair profits of the infringer, and reasonable royalties.²⁰⁷ However, damages cannot be punitive.²⁰⁸

How the UPC Changes the Current Patent System

The main change that the UPC provides is a unified court system for hearing European and unitary patents. Further, it provides a uniform body of law to which the court system must conform. The UPC grants primacy to Union law, but the Agreement and the Statute follow closely.²⁰⁹ The use of technical judges in the UPC is another major change.²¹⁰ None of the countries looked at used or had the option to utilize technical judges (barring Germany's Revocation Chamber), but in the central divisions, technical judges may be required, and local divisions have the option of requesting them.²¹¹ To further unify the international proceedings, the panel of judges consists of an international makeup appointed from a pool of judges rather than each locality only using judges from that country.²¹² Finally, the mandated interim proceeding allows for the court to encourage settlement between the parties rather than the parties determining that themselves.²¹³

COMPARATIVE ANALYSIS

Comparison of Existing Systems

Based on the amount of NPE litigation between the U.S. and Europe, the U.S. currently seems to be more plaintiff friendly, especially with respect to

²⁰⁴ *Id.* rule 113.

²⁰⁵ *Id.* rule 125, 126.

²⁰⁶ *Id.* rule 150.

²⁰⁷ *Council Agreement on a Unified Patent Court*, *supra* note 20, art. 68.

²⁰⁸ *Id.*

²⁰⁹ *Id.* arts. 20, 24.

²¹⁰ *Id.* art. 15.

²¹¹ *Id.* art. 8.

²¹² *Id.*

²¹³ UPC Rules of Procedure, *supra* note 198, rule 104.

the Western District of Texas.²¹⁴ Because the Western District of Texas is the most appealing district, the comparative analysis will be limited to that district in the U.S.

First, looking at the timeline of litigation, the U.S. and many European jurisdictions seem to be on par, with forums that have a wide range of resolution speeds.²¹⁵ Both regions have particular jurisdictions that are much faster, with German courts and the Eastern District of Virginia attempting to reach decisions in under a year.²¹⁶ However, a *Markman* hearing can stop U.S. patent litigation relatively early in the litigation process; for example Judge Albright generally holds the *Markman* hearing around six months after the case management conference.²¹⁷ While courts like Munich I in Germany have an “*frühe erste Anhörung*” (“early first hearing”), it is not specifically utilized for claim construction as the *Markman* hearing is and is less determinative of the outcome.²¹⁸ Given that the *Markman* hearing can be determinative, a case could be settled well under a year.²¹⁹ While certain European jurisdictions may overall be faster, the holding of the *Markman* hearing early in the litigation process in the Western District of Texas appeals more broadly to NPE plaintiffs.

The methods of claim construction are generally similar between the U.S. and Europe—at least on paper. Both forums utilize the claims as the main defining factor of the scope of the patent but allow for other intrinsic and extrinsic forms of evidence to be shown.²²⁰ However, judicially created doctrines may limit the scope of the claims more in the U.S. than in European countries that lack those doctrines. As an example, most European countries lack a strong prosecution history estoppel doctrine meaning the scope of the claims is not necessarily limited by anything stated during prosecution.²²¹ In contrast, the U.S. has a relatively strong prosecution history estoppel meaning statements made during prosecution may be binding on the patentee, and

²¹⁴ See discussion *supra* Section II.B.1.

²¹⁵ See Casino & Kasdan, *supra* note 70, at 4.

²¹⁶ *Id.*; Anderson, *supra* note 28, at 656.

²¹⁷ Standing Order, *supra* note 137, at 13.

²¹⁸ Thomas Musmann, *Patent Litigation under the “Munich Procedure”*, KLUWER PATENT BLOG (Mar. 15, 2017), <http://patentblog.kluweriplaw.com/2017/03/15/patent-litigation-under-the-munich-procedure/> [<https://perma.cc/B9A4-YNMD>]

²¹⁹ J. Jonas Anderson & Paul R. Gugliuzza, *Federal Judge Seeks Patent Cases*, 71 DUKE L. J. 419, 456–457 (2021).

²²⁰ See Convention on the Grant of European Patents, art 69(1), Oct. 5, 1973, 1065 U.N.T.S. 199; Phillips v. AWH Corp., 415 F.3d 1303, 1304 (Fed. Cir. 2005).

²²¹ See *e.g.* Bundesgerichtshof [BGH] [Federal Court of Justice] Mar. 12, 2002, 150 Entscheidungen des Bundesgerichtshofes in Zivilsachen [BGHZ] 161; Actavis UK Ltd & Ors v. Eli Lilly & Co. [2014] EWHC (Pat) 1511 at [111]. Netherlands is generally an exception. HR 22 Dec. 2006, NJ 2008, 538 m.nt. CY (Dijkstra/Saier Verpackungstechnik GmbH & Co.) (Neth.).

thus, can limit the scope of the claims.²²² Because the U.S. has judicially created doctrines that can limit the scope of the claims, claim construction may favor European forums.

Next, European countries generally do not have any form of discovery.²²³ In the U.S., discovery is an extremely costly component of litigation and could be a barrier to entry for many NPE plaintiffs.²²⁴ While it causes plaintiffs to have to obtain information and evidence on infringements by other means, there are tools in certain European jurisdictions that can help ease that burden. Specifically, France allows the *saisie-contrefaçon*.²²⁵ This heavily patentee-favored tool decreases the cost of self-discovering, the necessary evidence for an infringement case, and the evidence can subsequently be used in parallel proceedings in other countries.²²⁶ The existence of discovery in the U.S. seemingly pushes the favor in the European direction. However, in the Western District of Texas, discovery is stayed until after the conducting of the *Markman* hearing.²²⁷ As discussed previously, this could mean that the litigation is settled or dropped before any significant discovery is conducted. While it is still riskier than European jurisdictions that have no discovery, staying discovery until after the *Markman* hearing likely mitigates that risk enough to incentivize NPEs to choose the Western District of Texas.

U.S. trials also tend to be more plaintiff friendly than European litigation. Judges in each jurisdiction tend to be experts on IP and patent law in their respective jurisdictions but lack the technical background to be experts on the technology being brought in the case.²²⁸ U.S. jurisdictions allow for expert testimony to help educate them on the technology.²²⁹ However, in many European jurisdictions, courts can appoint technical experts.²³⁰ In Italy, these technical experts give an opinion on infringement and validity and, while not binding on the judges, if the judges disagree with the technical expert's opinion, a justification as to why must be given.²³¹ The judge appointed experts add an element of unpredictability to patent litigation cases since the parties cannot lead that expert towards their side with their questioning. NPEs look for more predictable outcomes to weigh their chances of success and incentivize their target to settle so this makes Europe less appealing.

²²² See *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 724 (2002).

²²³ *Casino & Kasdan*, *supra* note 70, at 5.

²²⁴ MOORE, *supra* note 31, at 185.

²²⁵ *Debré & Merdrignac*, *supra* note 75.

²²⁶ *Id.*

²²⁷ *Standing Order*, *supra* note 137, at 3.

²²⁸ See MOORE, *supra* note 31, at 318; see generally *Patent Litigation*, *supra* note 59. Certain European jurisdictions like Germany do have technically qualified judges. *Patent Litigation*, *supra* note 59, at 36.

²²⁹ 37 C.F.R. § 42.65; MOORE, *supra* note 31, at 263.

²³⁰ PATENT LITIGATION, *supra* note 73, at 85.

²³¹ *Id.*

Similarly, expert testimony in U.S. patent litigation cases is very important for explaining the technology and the law to the jury. Expert testimony can help counsel frame the case in a way that garners sympathy for their client.²³² While juries tend to be more unpredictable, juries can be swayed by their moral convictions more so than judges and technical experts who can understand the law and technology more so than the average lay person.²³³ Many patent cases can be framed in terms of stealing, copying, or misappropriation, which places the plaintiffs in a sympathetic light in a jury trial, potentially making the U.S. more appealing than Europe.

Substantively, both the U.S. and Europe behave similarly. Because patents must be granted to bring an infringement action—which occurs only after an in-depth review by the qualified patent office—many jurisdictions have the presumption of validity of the patent in patent infringement cases.²³⁴ This is especially true in jurisdictions like Germany where infringement and validity are bifurcated processes.²³⁵ A finding of infringement can occur before a finding of invalidity and cause commercial harm to an NPE's target even if the patent is later invalidated in the invalidity proceeding. Even further, most jurisdictions have some form of the doctrine of equivalents.²³⁶ Because of the more general nature of the doctrine of equivalent analysis in France, patents may be able to gain a broader scope than in the U.S.²³⁷ However, because NPEs hope to not make it to trial and the minimal differences in the application of the doctrine between the U.S. and France, this likely plays a minimal factor in an NPE's choice of jurisdiction. Similarly, after the America Invents Act of 2011 ("AIA"), invalidity proceedings and standards at trial more closely resemble those in Europe.²³⁸ Substantive law, while important, is probably the least important factor to NPE plaintiffs who do not plan to go to trial.

Another factor in favor of the U.S. is the ability to forum shop. Forum shopping in the U.S. depends on the choice of which federal district and is

²³² MOORE, *supra* note 31, at 263 ("It is important to develop a theme in the trial . . . [and] [t]he expert testimony should be consistent with, and support this theme.").

²³³ *Id.*

²³⁴ 35 U.S.C. § 282(a) (2023); Sterpi & Fosson, *supra* note 105 ("Granted patents are presumed to be valid"); Kellenter & Migdal, *supra* note 89 ("[I]nvalidity cannot be raised as a direct defence in infringement proceedings.").

²³⁵ PATENT LITIGATION, *supra* note 73, at 35–37.

²³⁶ *See e.g.*, Sterpi & Fosson, *supra* note **Error! Bookmark not defined.**, at 5, 25; Kellenter & Migdal, *supra* note **Error! Bookmark not defined.**, at 4, 6; Debré & Merdrignac, *supra* note **Error! Bookmark not defined.**

²³⁷ *See* Debré & Merdrignac, *supra* note **Error! Bookmark not defined.**

²³⁸ Shuba Haaldodderi Krishnamurthy, *U.S. Patent Reform Act of 2011 ("America Invents Act")*, J. INTELL. PROP., INFO. TECH. & E-COM. L. (2014), <https://www.jipitec.eu/issues/jipitec-5-1-2014/3906> [<https://perma.cc/V6JS-2M8L>], (last visited Feb. 3, 2022).

governed by the venue statute.²³⁹ Under the venue statute, a court has jurisdiction in patent cases where the alleged infringer has a regular and established place of business, and the harm takes place in that district.²⁴⁰ For any national and international corporation, this standard could easily be satisfied in districts that have large metropolitan areas—like the Western District of Texas.²⁴¹ In Europe however, rather than separate districts, forum shopping occurs between countries. The Brussels Regulation, while allowing for some forum shopping between countries, limits that forum shopping as well as the issues over which each forum can have jurisdiction.²⁴² Because NPE plaintiffs are more likely to get their choice of district, and thus, their choice of court in the U.S., the U.S. is more appealing.

Overall, because of the Western District of Texas heavily mitigates the risks to plaintiffs in U.S. patent litigation, the U.S. tends to be more appealing a choice of jurisdiction for NPE plaintiffs and international plaintiffs in general.

How Does the UPC Compare?

In determining whether the establishment of the UPC will draw international patent litigation out of the U.S., the differences between the UPC and the current European system are analyzed first.

The UPC Versus the Current European System

Looking at the totality of factors, the UPC is likely more appealing to plaintiffs and NPEs than the current European patent system. The one major factor that goes against the UPC is the limitation on the effects of forum shopping. While forum shopping is still available in the UPC—and may actually be more available than under solely the Brussels Regulation—the effects of forum shopping are limited by the push towards uniformity of the law and procedure. The primacy of Union law is maintained, but the hierarchy of legal sources in the UPC places the UPC Agreement and statute above that of national law.²⁴³ Local divisions are bound by the procedural laws outlined in the statute, thereby limiting the differences between jurisdictions.²⁴⁴ However, this is only important when looking at the changes in the system in an isolated context rather than an international and intercontinental context.

The make-up of the panel of judges is international versus the current purely national system.²⁴⁵ Internationality can reduce the effects of

²³⁹ 28 U.S.C. § 1400 (2021).

²⁴⁰ *Id.*

²⁴¹ *Waco*, *supra* note 123.

²⁴² *See generally* Regulation 1215/2012, *supra* note 57.

²⁴³ *Council Agreement on a Unified Patent Court*, *supra* note 20, art. 24, 7.

²⁴⁴ *Id.*, art. 56, 15.

²⁴⁵ *Id.*, art. 8, 4.

homefield advantage when bringing litigation in a particular party's home country. This could be a double-edged sword. While limiting the homefield advantage for NPEs filing within their home country, it can also limit the homefield advantage for defendants who are being sued where they are domiciled. This decreases the effect of the make-up of the panel on both sides. Another aspect of the panel is the ability to request technical judges in the first instance courts.²⁴⁶ Rather than just having technical experts attempting to persuade legally qualified judges one way or another, technical judges take an active position in the decision process.²⁴⁷ While it is too early definitively establish the technical judges affect the outcomes of litigation, technologically qualified judges may allow for increased predictability in patent cases.

It is still difficult to say if there are going to be any major substantive changes seen in the UPC. Specifically, how will the doctrine of equivalents be applied or evolve as more cases arrive to the UPC? And what methods of claim construction will the court apply? Because substantive matters really only matter at trial, they are less important than the procedural differences. It is also unclear how fast a standard litigation progresses through the UPC and how long litigation will last. There are particular deadlines outlined in the UPC Rules of Procedure, but many timeframes are given as "as soon as is practicable," which leaves ambiguity, especially in these early stages of the UPC.²⁴⁸

However, with the known factors and changes, the UPC is likely more appealing to NPE plaintiffs because of the increased uniformity of law and procedure and predictability of the outcome.

The UPC versus the U.S.

While the UPC may make litigation in the E.U. more appealing to NPE plaintiffs than does the current European patent system, it may not draw litigation out of the U.S. The main comparative reasons include awards of damages, the ability to judge shop, the use of technical judges, and the role of juries. The UPC clearly states that damages cannot be punitive.²⁴⁹ In the U.S. though, judge may treble the damages awarded by the jury.²⁵⁰ Judge Albright in the Western District of Texas exercises this discretion frequently.²⁵¹ While this clearly provides economic incentive to file in Texas over the UPC if the case were to go to trial, it also provides a major incentive for the defendant targeted by the NPE to settle. With the risk of trebled damages, the NPE plaintiff has more leverage to negotiate a bigger settlement than they would in the UPC.

²⁴⁶ *Id.*

²⁴⁷ *Id.*

²⁴⁸ *See e.g.* UPC Rules of Procedure, *supra* note 198, rule 4.

²⁴⁹ *Council Agreement on a Unified Patent Court*, *supra* note 20, art. 68, 18.

²⁵⁰ 35 U.S.C. § 284 (2021).

²⁵¹ *Waco*, *supra* note 123.

The Western District of Texas's judge assignment procedures allow NPE plaintiffs to judge shop. In the UPC, there will be a pool of judges that the president of the court then assigns to the case.²⁵² While the assignment is not a random assignment like in the Eastern District of Virginia, any assignment process that does not allow the NPE to select their judge provides some level of uncertainty that NPE plaintiffs tend to disfavor.

The existence of technical judges in the UPC may also be disfavored by NPE plaintiffs and other patent litigation plaintiffs. The *Markman* hearing for claim construction is a huge component of the patent litigation process in the U.S. The lack of technical expertise by the judges in the U.S. grants significantly more flexibility in the claim construction and could allow an NPE plaintiff to maintain as broad a claim construction as possible.²⁵³ With the existence of technical experts, the ability to litigate the claim construction is likely limited. While it may benefit the NPE plaintiff in certain cases that have clearly broad claims, it more likely limits the protection on the already weak patents that NPEs assert.

If the litigation does end up making it to trial, juries play a major role in U.S. litigation and are generally absent from European patent litigation.²⁵⁴ Jurors can easily be persuaded by the framing of the case, the technological complexity of the invention, and the reliability of witnesses and experts.²⁵⁵ Because jurors tend to dislike bad faith and stealing, many juries skew in favor of the plaintiff, which adds a level of predictability to the outcome of litigation if the case gets to trial.

CONCLUSION

The UPC and the Agreement does seem to create the certainty that patent litigation plaintiffs and, specifically, trolling NPEs like to see. And it may draw some trolling NPEs into to the UPC from other jurisdictions or create new opportunities for trolling NPEs to litigate. However, it may not draw patent litigation out of the plaintiff friendly jurisdictions of the U.S. like the Western District of Texas. The goals of NPEs during litigation are to expedite the litigation process, decrease costs, and have more certain and predictable outcomes to spur settlement negotiations, all in hopes to get the biggest payout from the assertion of their patent rights. In comparison to the Western District of Texas, the cost-benefit analysis of the UPC is not enough to draw NPEs out. All these factors combined far outweigh the benefits added to the European patent system by the UPC for trolling NPE plaintiffs. It is unlikely that it will draw a significant amount of litigation out of the U.S.

However, that is not to say that the E.U. will not see an increase in patent

²⁵² *Council Agreement on a Unified Patent Court*, *supra* note 20, art. 18, 6.

²⁵³ MOORE, *supra* note 32, at 318.

²⁵⁴ Casino & Kasdan, *supra* note **Error! Bookmark not defined.**, at 5.

²⁵⁵ MOORE, *supra* note 32, at 146.

litigation in the coming years. With the advent of the Unitary Patent System, the E.U. may see an increase in the number of international patents restricted to European countries which will subsequently increase the total volume of litigation within the E.U. and the UPC.

NOTE

ARBITRATION PRIME: AMAZON’S UTILITY PATENT EVALUATION PROCESS AND ITS INFLUENCE ON THE PRIVATE RESOLUTION OF PATENT DISPUTES

By: Samantha J. Thompson

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INTRODUCTION

Less than 30 years ago, Amazon.com, Inc. (“Amazon”) was a website that sold only books, but always had the intention of being much more.¹ Now,

¹ Avery Hartmans, *Jeff Bezos Originally Wanted to Name Amazon ‘Cadabra,’ and 14 Other Little-Known Facts About the Early Days of the E-Commerce Giant*, BUSINESS INSIDER (July 2, 2021, 2:42 PM), <https://www.businessinsider.com/jeff-bezos-amazon->

Amazon has become a global conglomerate, housing the world's largest e-commerce marketplace, with the ability to deliver any of its 353 million listed products within two to three days.² Such rapid growth created an opportunity for the ill-intentioned to abuse the wide audience that the Amazon marketplace provides, resulting in a significant number of counterfeit goods ravaging the e-commerce platform.³ Aware of the problem and unhappy with its impact, Amazon has established a variety of initiatives designed to protect intellectual property rights from those who may be using the corners of its marketplace to hide such infringement.⁴ Amazon's anti-counterfeiting measures have primarily focused on trademark infringement, as the visual nature of this type of intellectual property lends itself to automated machine learning techniques that can quickly and accurately detect inauthentic products and remove counterfeits from the marketplace.⁵

Utility patent infringement, however, requires evaluation of the inner workings of a product, making it more difficult to police through the same quality control measures as trademark infringement.⁶ As such, Amazon has piloted a new program, the Utility Patent Neutral Evaluation Process ("UPNE") in hopes of filling this gap in its intellectual property protection repertoire.⁷ Akin to non-binding arbitration, Amazon's UPNE attempts to resolve patent infringement disputes just as quickly and cost effectively as

history-facts-2017-4#fiona-was-the-original-code-name-for-amazons-kindle-14<https://www.businessinsider.com/jeff-bezos-amazon-history-facts-2017-4#fiona-was-the-original-code-name-for-amazons-kindle-14> [<https://perma.cc/3H4B-KGGR>]. [<https://perma.cc/3H4B-KGGR>].

² Bradley T., *Amazon Statistics: The Key Numbers and Fun Facts*, AMZSCOUT, <https://amzscout.net/blog/amazon-statistics> [<https://perma.cc/D58H-3R8W>] (last visited Jan. 9, 2022).

³ Elizabeth Segran, *'The Volume of the Problem is Astonishing': Amazon's Battle Against Fakes May be Too Little, Too Late*, FAST COMPANY (May 7, 2021), <https://www.fastcompany.com/90636859/the-volume-of-the-problem-is-astonishing-amazons-battle-against-fakes-may-be-too-little-too-late> <https://www.fastcompany.com/90636859/the-volume-of-the-problem-is-astonishing-amazons-battle-against-fakes-may-be-too-little-too-late> [<https://perma.cc/H736-9R8K>]; [<https://perma.cc/H736-9R8K>] see generally Gina Boone, *Designing Dupes: A Legislative Proposal for Holding Online Marketplaces Contributorily Liable for Counterfeit Goods*, 31 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 1302, 1306 (2021) (discussing avenues of liability for e-commerce platforms that are complicit in the sale of counterfeit goods on their marketplaces).

⁴ *Brand Protection Report*, AMAZON 3 (May 2021), <https://assets.aboutamazon.com/96/a0/90f229d54c8cba5072b2c4e021f7/amz-brand-report.pdf>.

⁵ *Id.*

⁶ *Id.* at 10.

⁷ Nathaniel Longley, *Success with Utility Patent Neutral Evaluation Procedure (UPNEP)*, DORSEY & WHITNEY LLP, <https://www.dorsey.com/clientachievements/amazon-success> [<https://perma.cc/CD5W-8CWT>]

the company delivers goods.⁸ The streamlined process has been generally well received but does not come without criticisms.⁹ With some changes, the program could provide a fair opportunity for parties to resolve their patent disputes without the downsides of traditional litigation.¹⁰

This article will first lay out the background on how patent disputes are typically resolved, with a predominate focus on traditional litigation and arbitration.¹¹ Next, it will briefly discuss Amazon's e-commerce dominance¹² and its attempts to curb intellectual property infringement on its marketplace, including a detailed description of the UPNE process.¹³ Finally, this article will analyze the benefits and shortcomings of the UPNE, and propose changes to the program.¹⁴ Specifically, this analysis section will note that, in order to ensure both the accused sellers and the patent holder receive a fair evaluation of their claims, the program must provide more transparency, permit extensions to allow unrepresented parties adequate time to obtain counsel, and allow the final decision maker to find that certain disputes are too complex to be handled through this simplified process.¹⁵

BACKGROUND INFORMATION

Typical Resolution of Patent Disputes

Through the powers granted to Congress under Article I of the United States Constitution, an inventor may be awarded a utility patent in exchange for disclosing an invention that meets the high statutory requirements of patentability to the public.¹⁶ The invention must be of patentable subject

⁸ *Brand Protection Report*, *supra* note 4, at 10.

⁹ See, e.g., *Amazon's New Patent Infringement Process is a Boon to Patent Holders but Holds the Potential for Abuse*, ELLENOFF GROSSMAN & SCHOLE LLP (May 29, 2019), <https://web.archive.org/web/20200803232449/https://www.egsllp.com/blog/amazons-new-patent-infringement-review-process-is-boon-to-patent-holders-but-holds-the-potential-for-abuse> [<https://perma.cc/BJN5-2ZEF>] [*hereinafter Amazon's New Patent Infringement Process*]; Blake Brittain, *Amazon's Judging of IP Claims Questioned in Seller Lawsuits (2)*, BLOOMBERG LAW (Feb. 12, 2020, 2:15 PM), <https://news.bloomberglaw.com/ip-law/amazons-judging-of-ip-disputes-questioned-in-sellers-lawsuits>.

¹⁰ See *infra* Section III.A.i.

¹¹ See *infra* Section II.A.

¹² See *infra* Section II.B.

¹³ See *infra* Section II.C.

¹⁴ See *infra* Section III.

¹⁵ See *infra* Section III.B.

¹⁶ U.S. CONST. art. I, § 8, cl. 8; 35 U.S.C. §§ 101–03, 112.

matter,¹⁷ useful,¹⁸ novel,¹⁹ and nonobvious.²⁰ Additionally, the invention must have been invented by the original inventor,²¹ avoid the statutory time bars,²² adequately disclose,²³ and distinctly claim the invention.²⁴ With the granting of a patent, the inventor is given a virtual monopoly over the invention for a term of twenty years as of the filing date of the patent application, regardless of what is developed subsequent to the patent's filing date.²⁵ This makes patents highly sought after, especially in competitive areas of technological developments.²⁶ In exchange for the rights granted to the inventor, the inventor must disclose his invention to the public, such that a person having ordinary skill in the art could recreate the invention without undue experimentation.²⁷

Patent infringement occurs when “whoever without authority makes, uses, offers to sell, or sells any patented invention.”²⁸ Many patent infringement issues involve high stakes and complex issues, with plaintiffs asserting multiple patent claims at a time.²⁹ These patent claims may be settled through litigation, or through alternative dispute resolution methods, such as mediation or arbitration.³⁰

¹⁷ 35 U.S.C. § 101.

¹⁸ *Id.*

¹⁹ 35 U.S.C. § 102.

²⁰ 35 U.S.C. § 103.

²¹ 35 U.S.C. § 101.

²² 35 U.S.C. § 102(b).

²³ 35 U.S.C. § 112.

²⁴ *Id.*

²⁵ 35 U.S.C. § 154.

²⁶ See Jay P. Kesan, *Economic Rationales for the Patent System in Current Context*, 22 GEO. MASON L. REV. 897, 915–18 (2015). Although different industries rely on various economic justifications in pursuing patent protection, once received, patents play a key role in any corporation's asset portfolio. *Id.* For example, “patents remain critical in the biotechnology and medical industries” which rely on patents to reduce competition and recover research and development costs by charging monopoly pricing. *Id.* at 915–16. Additionally, although software and information technology sectors are less concerned with copying of inventions, patents assist in facilitating licensing agreements which can aid in recovering the hefty investment required to develop highly complex software platforms. *Id.* at 916–17.

²⁷ 35 U.S.C. § 112.

²⁸ 35 U.S.C. § 271.

²⁹ Ilya Gorelik, *Resolving Self-Driving Car Patent Conflicts: Arbitration in Waymo v. Uber and Future Autonomous Vehicle Patent Disputes*, 20 CARDOZO J. CONFLICT RESOL. 229, 232 (2018).

³⁰ *Id.*

Litigation

Patent infringement is a tort³¹ which federal courts have exclusive jurisdiction to hear.³² However, the complex nature of the technical issues inherent in patent disputes expose unique shortcomings in the federal court system that other cases under federal jurisdiction do not experience to the same degree.³³ The main issue with litigating patent infringement in federal court is its exorbitant cost which has led these lawsuits to be described as the “Sport of Kings.”³⁴ The American Intellectual Property Law Association’s 2019 Economic Survey revealed that patent litigation costs in 2019 ranged between \$700,000 and \$4 million.³⁵

As in many types of civil litigation, discovery is a significant contributor to this overall cost.³⁶ As discovery advances and the issues being resolved come into focus, tangential questions begin to arise which require their own intense discovery investigations in order to ensure they have been fully vetted and understood.³⁷ While this type of cyclical discovery is not unique to patent disputes, the need for technical experts and intense research to fully comprehend the scope of all the issues creates costs that are not required in other types of civil litigation.³⁸

Additionally, the length of patent litigation proceedings in federal court is extensive.³⁹ Patent rights are a depreciating asset—the monopoly granted to an inventor through the patent lasts for a term of twenty years from the date of filing.⁴⁰ As each year of that term passes, the patent steadily decreases in

³¹ *Schillinger v. United States*, 155 U.S. 163, 169 (1894).

³² *Introduction to the Federal Court Systems*, U.S. DEP’T OF JUST., <https://www.justice.gov/usao/justice-101/federal-courts> [<https://perma.cc/C5G2-SRUW>][<https://perma.cc/C5G2-SRUW>] (last visited Jan. 9, 2022).

³³ Steven J. Elleman, *Problems in Patent Litigation: Mandatory Mediation May Provide Settlements and Solutions*, 12 OHIO ST. J. ON DISP. RESOL. 759, 761 (1997).

³⁴ David C. Berry, *Harnessing the “Sport of Kings.” Using Pre-Dispute Arbitration Agreements to Control Discovery in Patent Disputes*, 9 W. MICH. COOLEY J. PRAC. & CLINICAL L. 1, 1 (2006).

³⁵ Scott P. McBride, *Strategies for Controlling Costs in Patent Litigation*, LAW360 (Sept. 12, 2019), <https://plus.lexis.com/api/permalink/3b28c45e-be34-4b21-8158-40dd127614ec?context=1530671>.

³⁶ Alan W. Kowalchuk, *Resolving Intellectual Property Disputes Outside of Court: Using ADR to Take Control of Your Case*, 61 DISP. RESOL. J. 28, 30 (2006) (more than half of the cost required to resolve an intellectual property infringement case “is incurred up to the completion of discovery”); David E. Sosnowski, *Resolving Patent Disputes Via Mediation: The Federal Circuit and the ITC Find Success*, 45 MD. B.J. 24, 26 (2012).

³⁷ Gregg A. Paradise, *Arbitration of Patent Infringement Disputes: Encouraging the Use of Arbitration Through Evidence Rules Reform*, 64 FORDHAM L. REV. 247, 254 (1995).

³⁸ Tyler Train, *The Appeals of Patent Mediation: Are Incentives to Mediate Patent Disputes Reduced on Appeal?*, 21 U.S.F. INTELL. PROP. & TECH. L.J. 145, 147 (2017).

³⁹ Kowalchuk, *supra* note 36.

⁴⁰ 35 U.S.C. § 154.

value.⁴¹ The median time to trial for patent litigation cases is approximately 2.4 years, although some have lasted over ten years, which begins to approach the life of the patent in dispute.⁴² Despite these statistics, the length of time it will take to resolve a patent infringement case is unpredictable, which can tie down a company that, in a fast paced technological market, cannot waste years on litigation, especially if the technology can become outdated in months.⁴³ Some factors which contribute to the length of these proceedings include the amount of time needed to bring judges and juries up to speed on the technical issues, the number of expert depositions required, and the multitude of motions and appeals being filed.⁴⁴

Finally, a delicate issue with patent litigation is that fact finders, whether judge or jury, are often not equipped to handle such technically complex matters.⁴⁵ Most judges do not regularly preside over patent litigation cases.⁴⁶ The pressure to deliver timely judgments in lieu of the extensive evidence presented at trial prevents judges from dedicating the requisite time to fully understanding the complexity of the facts at issue.⁴⁷ And the burden placed on juries to understand these technologies is just as strenuous.⁴⁸ Trial judges and juries are simply not provided with the necessary accessibility to the tools needed to properly adjudicate such highly technical disputes.⁴⁹

While litigation is the traditional method for resolving allegations of patent infringement, these shortcomings demonstrate why parties, both

⁴¹ Postlewaite, Cameron & Kittle-Kamp, *FEDERAL INCOME TAXATION OF INTELLECTUAL PROPERTY AND INTANGIBLE ASSETS*, *FED. INCOME TAXATION OF INTELL. PROP. & INTANGIBLE ASSETS* 7 (May 2021A) (additionally, noting that to enjoy the full benefit of the patent term, the owner must pay increasingly steep periodic maintenance fees. *Id.* Thus, the value of the patent decreases each time such a payment is required.); 35 U.S.C. § 41.).

⁴² *2018 Patent Litigation Study*, PwC 14 (2018) <https://www.ipwatchdog.com/wp-content/uploads/2018/09/2018-pwc-patent-litigation-study.pdf> [<https://perma.cc/75Q6-7YD8>]; [<https://perma.cc/75Q6-7YD8>]; see, e.g., *Grain Processing Corp. v. American Maize Products Co.*, 185 F.3d 1341, 1345 (Fed. Cir. 1999) (demonstrating that although the case was originally filed in 1981, a decision from the Federal Circuit was not reached until 1999).

⁴³ Paradise, *supra* note 37, at 251–52.

⁴⁴ See generally *Do Patent Disputes go to Trial*, *PATTERSON THUENTE IP*, <https://www.ptslaw.com/patent-law/do-patent-disputes-go-to-trial/> [<https://perma.cc/R9LF-MJAD>]. [<https://perma.cc/R9LF-MJAD>].

⁴⁵ Kowalchuk, *supra* note 36, at 35.

⁴⁶ *Blonder-Tongue Labs. v. Univ. of Ill. Found.*, 402 U.S. 313, 336 (1971).

⁴⁷ Murray Lee Eiland, *The Institutional Role in Arbitrating Patent Disputes*, 9 *PEPP. DISP. RESOL. L.J.* 283, 286–87 (2009).

⁴⁸ See, e.g., Paradise, *supra* note 37, at 254 (quoting one commentator who harshly described the lack of technical expertise in juries by stating “[w]hen the experts disagree, we submit the question to six to twelve jurors completely ignorant of the subject matter both technically and legally’ and expect them to produce justice and equity”).

⁴⁹ *Id.* at 255.

potential plaintiffs and defendants, often look for alternatives to resolving such disputes.⁵⁰

Alternative Dispute Resolution

According to the Interagency Working Group, a collaborative group of Alternative Dispute Resolution (“ADR”) professionals from various federal agencies,⁵¹ ADR “encompasses a range of non-binding and binding techniques used to voluntarily resolve issues in controversy.”⁵² More simply, although no agreed upon definition has been established, ADR broadly encompasses any method of resolving a dispute outside of court.⁵³ The most common forms of ADR include arbitration, mediation, and negotiations.⁵⁴

However, because the resolution of disputes over patent validity and infringement affect both the parties involved and the general public, ADR was historically considered an unfavorable option for resolving such questions.⁵⁵ In fact, courts often held that arbitration awards were unenforceable because resolving such cases in this manner was against public interest.⁵⁶ But the expansion of the scope of patentable subject matter in the early 1980’s⁵⁷ led to a steady increase in the number of patent infringement disputes being litigated, which put additional pressure on an already overloaded federal docket.⁵⁸

In response to the reluctance of courts to implement ADR programs and noting the advantages of such judicial alternatives, Congress amended the Patent Act in 1982 to add § 294, which “ensured that agreements to submit patent disputes to arbitration are enforceable in court.”⁵⁹ As a result,

⁵⁰ Konstantinos Petrakis, *The Role of Arbitration in the Field of Patent Law*, 52 DISP. RESOL. J. 24, 27 (1997).

⁵¹ *About the Interagency ADR Working Group*, INTERAGENCY ALT. DISP. RESOL. WORKING GRP., <https://adr.gov/about-adr/legislation-and-interagency-adr-working-group/> [<https://perma.cc/S3VN-XJP7>][<https://perma.cc/S3VN-XJP7>] (last visited Jan. 9, 2022).

⁵² *Introduction to ADR*, INTERAGENCY ALT. DISP. RESOL. WORKING GRP., <https://adr.gov/guidance/adrguide-home/part1/> [<https://perma.cc/E8PZ-ZWSE>] [<https://perma.cc/E8PZ-ZWSE>] (last visited Jan. 9, 2022).

⁵³ *Alternative Dispute Resolution*, LEGAL INFO. INST., https://www.law.cornell.edu/wex/alternative_dispute_resolution [<https://perma.cc/2MEV-KFVM>][<https://perma.cc/2MEV-KFVM>] (last visited Jan. 9, 2022).

⁵⁴ *Id.*

⁵⁵ Laura Fishwick, *Mediating with Non-Practicing Entities*, 27 HARV. J.L. & TECH. 331, 334 (2013).

⁵⁶ *See e.g.*, *Zip Mfg. Co. v. Pep Mfg. Co.*, 44 F.2d 184, 185–86 (D. Del. 1930).

⁵⁷ *See, e.g.*, *Diamond v. Chakrabarty*, 477 U.S. 303 (1980); *Diamond v. Diehr*, 450 U.S. 175 (1981).

⁵⁸ Paradise, *supra* note 37, at 256.

⁵⁹ Elleman, *supra* note 33, at 767; 35 U.S.C. § 294.

arbitration may be utilized to resolve disputes as to patent validity, infringement, and enforceability.⁶⁰

Parties can agree to resolve their claims through ADR prior to any dispute arising by including an arbitration or mediation clause in their initial engagement contract or, if no such clause governs the parties' method of dispute resolution, the parties may also agree to resolve their claims through ADR after the dispute arises.⁶¹

Arbitration

During arbitration, the parties to a dispute present their cases to a jointly elected third-party arbitrator or panel of arbitrators who is responsible for reviewing the evidence, overseeing the proceedings, and, ultimately, rendering a decision, opinion, or award.⁶² Arbitration can be either "binding" and "nonbinding."⁶³ Whereas binding arbitration results in an award that has limited appealability and is enforceable in court, non-binding arbitration does not compel either party to follow the final decision.⁶⁴ However, it is important to note that binding arbitration awards are considered final and binding only to the parties involved in the dispute.⁶⁵ Unless otherwise specified by the parties, arbitration proceedings are assumed to be binding.⁶⁶

The American Arbitration Association ("AAA"), one of the most frequently utilized arbitration administrators, established a set of rules for governing party behavior in patent infringement disputes in response to Congress's passage of 35 U.S.C. § 294.⁶⁷ Although parties are free to agree to their own arbitration rules and process, the AAA rules are often used as a starting point for parties entering into any arbitration agreement.⁶⁸ The AAA process permits each side to state their case, including any defense available to the parties under 35 U.S.C. § 282 and to engage in a "question and answer" session

⁶⁰ Elleman, *supra* note 33, at 767.

⁶¹ 35 U.S.C. § 294.

⁶² Elleman, *supra* note 33, at 769.

⁶³ Steven C. Bennett, *Non-Binding Arbitration: An Introduction*, 61 DISP. RESOL. J. 22, 23 (2006).

⁶⁴ *Id.* at 25; Vivek Koppikar, *Using ADR Effectively in Patent Infringement Disputes*, 89 J. PAT. & TRADEMARK OFF. SOC'Y SOC'Y 158, 160 (2007).

⁶⁵ 35 U.S.C. § 294(c); Daniel Schimmel & Ila Kapoor, *Resolving International Intellectual Property Disputes in Arbitration*, 21 No. 2 INTEL. PROP. & TECH L.J. 5, 5 (2009).

⁶⁶ Elleman, *supra* note 33, at 769–70.

⁶⁷ *See Resolution of Patent Disputes Supplementary Rules*, AM. ARB. ASS'N 3 (2006) <https://www.adr.org/sites/default/files/Resolution%20of%20Patent%20Disputes%20Supplementary%20Rules.pdf> [https://perma.cc/6G5W-PDRN] [[https://perma.cc/6G5W-PDRN] *hereinafter* AAA Resolution of Patent Disputes Supplementary Rules].

⁶⁸ *Id.* at 7; Paradise, *supra* note 37, at 260.

with the arbitrator before the arbitration hearing closes.⁶⁹ After hearing from the parties and evaluating the evidence, the arbitrator reaches and informs the parties of their decision.⁷⁰ For the award to be fully binding, the parties must then notify the Commissioner of Patents of the award.⁷¹

Arbitration of intellectual property disputes provides parties with notable benefits over traditional litigation.⁷² First, private arbitration has been statistically proven to be more cost effective and less time consuming than traditional litigation, especially in the area of patent infringement.⁷³ During arbitration proceedings, discovery is typically limited and the rules of evidence do not apply in order to keep the cost and formality of the proceedings low.⁷⁴ As a result, most patent arbitration disputes cost less than 85% of the potential expenditure to litigate the same case.⁷⁵ The time savings are also substantial.⁷⁶ Even for fairly complex technologies, arbitration can typically get a decision and permanent injunction in place within 365 days through arbitration, as opposed to litigation which can take years.⁷⁷ Additionally, judicial precedent and statutory regulations generally encourage the use of ADR such as arbitration to help manage the docket backlog seen in many courts around the country.⁷⁸

Second, the use of an expert arbitrator provides holistic benefits, especially if the arbitrator is experienced in both patent law generally and the specific field of technology in dispute.⁷⁹ Having an expert with such knowledge can reduce the amount of time needed to educate the fact-finder on the

⁶⁹ Paradise, *supra* note 37, at 260; 35 U.S.C. § 294(b).

⁷⁰ Paradise, *supra* note 3737, at 260–61.

⁷¹ *Id.*; 35 U.S.C. § 294(d)–(e).

⁷² AAA Resolution of Patent Disputes Supplementary Rules, *supra* note 67, at 4 (“Those who support arbitration . . . have acknowledged the following advantages of arbitration over litigation in this technical field: speed and economy, privacy, convenience, informality, reduced likelihood of damage to ongoing business relationships, more suitability to international problems, and the ability of the parties to select arbitrators who are experts and familiar with the subject matter of the dispute.”).

⁷³ Train, *supra* note 38.

⁷⁴ Kowalchuk, *supra* note 36, at 31; *see generally* Berry, *supra* note 34, at 13–24 (discussing various ways parties to arbitration can reduce cost by implementing discovery control provisions in their arbitration agreement.).

⁷⁵ Petrakis, *supra* note 50, at 29.

⁷⁶ *Id.* at 28.

⁷⁷ *Id.*

⁷⁸ Kevin R. Casey, *Alternative Dispute Resolution and Patent Law*, 3 FED. CIR. BAR J. 1, 4 n.12 (1993) (“The Speedy Trial Act of 1974 . . . has crowded district court trial dockets with criminal cases and made protracted patent infringement trials, which typically require between a week and a month to try, a nuisance to be avoided.”).

⁷⁹ *See* Jesse S. Bennett, *Saving Time and Money by Using Alternative Dispute Resolution for Intellectual Property Disputes-WIPO to the Rescue*, 79 REV. JUR. U.P.R. 389, 396 (2010).

technology, the amount of expert testimony required, and the time required to reach a resolution, all of which result in a significant decrease in cost.⁸⁰ A third benefit to arbitration is confidentiality. Unlike federal litigation, arbitration proceedings do not publish any information used in resolving the dispute, which protects the parties' potential trade secrets and business secrets from being released to the public.⁸¹

The benefits of utilizing arbitration do not come without trade-offs or criticisms.⁸² Practitioners have been hesitant in utilizing arbitration in high stakes cases because arbitration tends to lack many of the procedural safeguards offered by federal civil litigation, such as the Federal Rules of Evidence, the Federal Rules of Civil Procedure, and *stare decisis*.⁸³ While these safeguards are always important, data has also shown that ADR techniques offer their best savings and function most efficiently during high-stakes disputes.⁸⁴

Similarly, there are often concerns regarding the lack of full discovery permitted during arbitration.⁸⁵ The need for comprehensive discovery in order to fully understand and prove infringement of such complex technology is at odds with the goal of arbitration to reduce the time and money spent on dispute resolution.⁸⁶ The AAA's solution is to provide for limited discovery, including giving arbitrators the power to issue "pseudo-subpoenas," which can be used to secure evidence such as inventor testimony or vital records.⁸⁷ Also, the flexibility of arbitration permits the parties to agree to how much discovery they would like to participate in.⁸⁸

Mediation

Mediation is distinct from arbitration in that the purpose is to facilitate a settlement between the parties rather than reach a decision regarding the merits of the claim.⁸⁹ The mediator reviews the claims of each party and

⁸⁰ *Id.*

⁸¹ *Id.*; see also Thomas D. Barton & James M. Cooper, *Symposium Introduction: Advancing Intellectual Property Goals Through Prevention and Alternative Dispute Resolution*, 43 CAL. W. INT'L L.J. 5, 29 (2012).

⁸² See generally Sarah Beisheim, William Eipert, Ron Raider, & Michael Turton, *Think Before You Arbitrate: Considerations for Patent Disputes*, 7 ACC DOCKET 36 (2018).

⁸³ EllemanElleman, *supra* note 3333, at 773773.

⁸⁴ *Id.*

⁸⁵ Berry, *supra* note 34, at 11–12.

⁸⁶ *Id.*

⁸⁷ Paradise, *supra* note 37, at 266; *Subpoena Process FAQ*, AM. ARB. ASS'N, https://www.adr.org/sites/default/files/document_repository/AAA_Subpoenas_Process_FAQ_0.pdf [<https://perma.cc/7ST6-PQ8P>]. [<https://perma.cc/7ST6-PQ8P>].

⁸⁸ See Berry, *supra* note 34, at 10–11.

⁸⁹ Elleman, *supra* note 33, at 770.

attempts to create an understanding between the parties as to where their differences lie.⁹⁰ Because mediation is an avenue to reach a settlement, the opinion of the mediator is not binding; however, any settlement agreement that is executed by the parties as a result of the agreement can be enforced under contract law.⁹¹

Mediation also utilizes expert mediators which provides many of the same benefits that such a neutral evaluator provides in arbitration (i.e., streamlined discovery, reduction of expert testimony, limited explanation of the technology).⁹² Additionally, mediation better preserves the business relations between the parties because the proceeding is inherently less adversarial.⁹³

However, like arbitration, there has been a historical hesitancy among intellectual property professionals to engage in mediation.⁹⁴ For example, there is an assumption by some that mediation is a waste of time because, if the parties were unable to reach an agreement through independent negotiations, mediation will not be able to solve the problem.⁹⁵ Additionally, mediation is unable to provide interim relief such as preliminary injunctions, which can be critical in preventing further damages.⁹⁶ Despite these unfounded beliefs, mediation has proven benefits equal to those of arbitration over traditional patent litigation.⁹⁷

History of Amazon and Third-Party Sellers

As of March 31, 2021, Amazon was ranked as the fourth largest company in the world, with a market capitalization of over \$1.6 trillion.⁹⁸ Amazon is by far the world's e-commerce leader, generating more than double the number of desktop visitors per month than its next closest competitor.⁹⁹ From June 2019 through June 2020, online sales through Amazon accounted for

⁹⁰ Bennett, *supra* note 79, at 394.

⁹¹ *Id.*

⁹² See Wendy Levenson Dean, *Let's Make a Deal: Negotiating Resolution of Intellectual Property Disputes Through Mandatory Mediation at the Federal Circuit*, 6 J. MARSHALL REV. INTELL. PROP. L. 365, 368–70 (2007).

⁹³ *Id.* at 366, 370.

⁹⁴ Sosnowski, *supra* note 36, at 2424.

⁹⁵ *Intellectual Property Roundtable: A Discussion of IP and ADR*, 60 DISP. RESOL. J. 68, 76 (2005).

⁹⁶ Bennett, *supra* note 79, at 398.

⁹⁷ Sosnowski, *supra* note 36, at 2424.

⁹⁸ Jenna Ross, *The Biggest Companies in the World in 2021*, VISUAL CAPITALIST (June 10, 2021), <https://www.visualcapitalist.com/the-biggest-companies-in-the-world-in-2021> [<https://perma.cc/D4BJ-UPLN>]. [<https://perma.cc/D4BJ-UPLN>].

⁹⁹ Stephanie Chevalier, *Desktop Visitors to Leading U.S. Online Retail Properties 2018*, STATISTA (Feb. 16, 2023), <https://www.statista.com/statistics/324321/us-retail-site-desktop-audience-reach> [<https://perma.cc/MMD6-7376>]. [<https://perma.cc/MMD6-7376>].

\$163 billion in revenue.¹⁰⁰ The tech giant brought in an additional \$63 billion through the fees and commissions charged to third-party sellers during the same period.¹⁰¹ Third-party sellers are independent sellers who are less reliant on Amazon than their first-party counterparts due to their ability to control pricing, payment terms, and fulfillment methods.¹⁰² These sellers made up 56% of paid units sold on Amazon in the second quarter of 2021.¹⁰³ All this to say, third-party sellers looking to enter the online retail marketplace would be remiss to not take advantage of the heavy traffic, customer loyalty, and ease of business provided by Amazon.¹⁰⁴

The COVID-19 pandemic has emphasized the need for businesses to sell goods on online marketplaces such as Amazon.¹⁰⁵ As these platforms continue to grow with this influx of new sellers, it is increasingly important that these online marketplaces create policies that protect intellectual property rights.¹⁰⁶ Amazon's seller expectations make clear that listings which violate the intellectual property rights of others are prohibited.¹⁰⁷ Specifically, the

¹⁰⁰ Mayumi Brewster, *Annual Retail Trade Survey Shows Impact of Online Shopping on Retail Sales During COVID-19 Pandemic*, U.S. CENSUS BUREAU (Apr. 27, 2022), <https://www.census.gov/library/stories/2022/04/ecommerce-sales-surged-during-pandemic.html> [<https://perma.cc/3922-V3L8>]; see generally <https://www.visualcapitalist.com/amazon-revenue-model-2020> [<https://perma.cc/732L-8DY9>]. Mayumi Brewster, *Annual Retail Trade Survey Shows Impact of Online Shopping on Retail Sales During COVID-19 Pandemic*, U.S. CENSUS BUREAU (Apr. 27, 2022), <https://www.census.gov/library/stories/2022/04/ecommerce-sales-surged-during-pandemic.html> [<https://perma.cc/3922-V3L8>]; see generally Carmen Ang, *Visualized: A Breakdown of Amazon's Revenue Model*, VISUAL CAPITALIST (Oct. 14, 2020), <https://www.visualcapitalist.com/amazon-revenue-model-2020> [<https://perma.cc/732L-8DY9>]. It is notable that the COVID-19 pandemic hit the United States starting in March 2020 and, because many were forced to remain in their homes, online shopping numbers increased. As such, the statistics from March through June 2020 may be inflated.

¹⁰¹ Ang, *supra* note 100.

¹⁰² StephanieChevalier, *Amazon Third-Party Seller Share 2007-2021*, STATISTA (Aug. 11, 2021), <https://www.statista.com/statistics/259782/third-party-seller-share-of-amazon-platform> [<https://perma.cc/3KN2-HBDK>]. [<https://perma.cc/3KN2-HBDK>].

¹⁰³ *Id.*

¹⁰⁴ Brian Edmondson, *How to Become a Profitable Amazon Seller*, THE BALANCE SMALL BUS. (May 14, 2021), <https://www.thebalancesmb.com/how-amazon-sellers-can-profit-4143331> [<https://perma.cc/SMB6-7BLG>]. [<https://perma.cc/SMB6-7BLG>].

¹⁰⁵ William Hurler, *Amazon's New Utility Patent Neutral Evaluation Process*, DICKINSON WRIGHT (Dec. 16, 2020), <https://www.lexology.com/library/detail.aspx?g=e54e7ea9-b0de-4c5d-b806-e9e9f17e23a6> [<https://perma.cc/F26R-K2ZD>]. [<https://perma.cc/F26R-K2ZD>].

¹⁰⁶ *Id.*

¹⁰⁷ *Intellectual Property Policy for Sellers*, AMAZON SELLER CENT., <https://sellercentral.amazon.com/gp/help/external/help.html?itemID=201361070> [<https://perma.cc/N9H5-9G3A>]. [<https://perma.cc/N9H5-9G3A>].

seller expectations state that sellers are “expected to follow the law,” that “Amazon takes claims of IP infringement seriously,” and that infringement of intellectual property, even without knowledge, may result in “the seller’s account. . . receive[ing] a warning or be[ing] suspended.”¹⁰⁸ These guidelines define the various types of intellectual property and recommend that, if a seller is unsure if they are violating another’s intellectual property, the seller should seek advice from legal counsel before listing a product for sale.¹⁰⁹

Amazon’s seller policy also makes clear that if there has been a well-founded complaint against a seller, Amazon may remove the product from the marketplace before the seller is given an opportunity to respond to the allegations.¹¹⁰ Known by critics as a “quick trigger” response, the result of this form-based complaint system is that some sellers have filed baseless claims of infringement against their competitors in order to have a product quickly removed and, in turn, corner the market for the sale of that product.¹¹¹ These critics have likened this system to a baseless preliminary injunction that can cause irreparable harm to small businesses.¹¹² However, this “quick trigger” response is not often seen in utility patent cases; instead, the anecdotal accounts of this type of treatment are primarily seen in design patent and trademark infringement cases.¹¹³

Amazon’s Initiatives Aimed at Curbing Intellectual Property Infringement

Recognizing that the current system is inefficient at protecting both third-party sellers and intellectual property rights owners, Amazon has established various initiatives in an attempt to curb intellectual property infringement and identify and remove counterfeit products from the marketplace.¹¹⁴ The e-commerce giant has established five main programs to fight intellectual property infringement on its market place: Brand Registry, Transparency, Project Zero, IP Accelerator, and the Utility Patent Neutral Evaluation Process.¹¹⁵

Brand Registry

Amazon’s Brand Registry program was established in 2017 with the intent of building and protecting brand integrity by managing the trademark rights

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ Gaston Kroub, *Arbitration in the Age of Amazon*, LANDSLIDE (Sept. 22, 2019), https://www.americanbar.org/groups/intellectual_property_law/publications/landslide/2019-20/september-october/arbitration-the-age-amazon [<https://perma.cc/3LFS-9ZCX>]. [<https://perma.cc/3LFS-9ZCX>].

¹¹¹ Brittain, *supra* note 9.

¹¹² *Id.*

¹¹³ Kroub, *supra* note 110.

¹¹⁴ *Brand Protection Report*, *supra* note 4.

¹¹⁵ *Id.* at 7–12.

of these registered sellers, thereby improving customer experience.¹¹⁶ The Brand Registry program was Amazon's first attempt to curb the sale of counterfeit products and remains influential today.¹¹⁷ In 2020, the Brand Registry program enrolled more than 500,000 brands which, on average, reported 99% fewer suspected infringements before enrollment in the Brand Registry program.¹¹⁸

Once a trademark owner has successfully registered its brand with the Brand Registry program,¹¹⁹ Amazon is able to proactively remove suspected infringing or inaccurate content.¹²⁰ Additionally, the brand owner is given the ability to report violations found through searching the marketplace via images, Amazon Standard Identifying Numbers ("ASINs"), or terms for suspected infringers.¹²¹ Considering the eligibility requirements, the tools provided by the Brand Registry program are inherently targeted to trademark owners.¹²² Nevertheless, if a brand qualifies for the program through an

¹¹⁶ *Id.* at 8.

¹¹⁷ Kaity Y. Emerson, *From Amazon's Domination of E-Commerce to its Foray into Patent Litigation: Will Amazon Succeed As "The District of Amazon Federal Court"?*, 21 N.C. J. L. & TECH 71, 85 (2019).

¹¹⁸ *Brand Protection Report*, *supra* note 4, at 8.

¹¹⁹ To qualify for the Brand Registry program, the brand owner must have an active registered text-based or image-based trademark in each country where the brand wishes to enroll (provided said country is on Amazon's pre-approved list) or have a pending trademark application filed through the Amazon IP Accelerator program. *Getting Started in Three Steps*, AMAZON, <https://brandservices.amazon.com/brandregistry/eligibility> [<https://perma.cc/6QEW-SQYV>] (last visited Jan 9, 2022). The text- or image-mark must match the brand name on the application and appear on the seller's products or packaging. *Id.* Only the trademark owner may submit the application to enter the program. *Id.* (noting authorized agents may be added after registration is complete).

To enroll a brand, the seller must provide: the brand name that has an active registered trademark which appears on the seller's product or packaging, the trademark registration number provided by an approved Intellectual Property office, and a list of product categories (such as apparel, sporting goods, electronics) in which the brand should be listed. Denise Mosteller & Jeremiah A. Pastrick, *Amazon Brand Registry*, AMERICAN KNIFE & TOOL INSTITUTE, <https://www.akti.org/brand-protection/amazon-brand-registry> [<https://perma.cc/27UP-NYNQ>] (last visited Jan 9, 2022). Amazon will then authenticate that the applicant is the true rights owner of the trademark before finalizing the brand's enrollment in the program. *Id.*

¹²⁰ *Amazon Brand Registry*, AMAZON, <https://brandservices.amazon.com/> [<https://perma.cc/2N9U-MG3U>] (last visited Jan 9, 2022)..

¹²¹ Mosteller & Pastrick, *supra* note 119. If the violation is accepted, Amazon will provide the brand owner with the contact information of the accused seller, in hopes that the parties will be able to independently reach a resolution to the infringement allegations. *Id.* Additionally, data from approved reported violations are fed into Amazon's machine learning algorithms to improve the automated system's proactive protective measures. *Brand Protection Report*, *supra* note 4, at 8.

¹²² *Getting Started in Three Steps*, *supra* note 119.

active trademark registration and has a design patent on the same product, the tools under the Brand Registry umbrella may be useful in identifying design patent infringement as well as trademark infringement.¹²³

TRANSPARENCY

Amazon's Transparency program is a product serialization service which aims to proactively prevent counterfeit products and proactively protect authentic goods.¹²⁴ To qualify for the Transparency program, the brand must be enrolled in Amazon's Brand Registry program, must have a Global Trade Item Number ("GTIN"), such as a UPC or barcode on the product being registered, and must have the ability to apply Transparency codes¹²⁵ on every manufactured unit.¹²⁶ Once enrolled in the program, Amazon scans the unique Transparency code during the shipping process to ensure that only authentic units are shipped to customers.¹²⁷ Additionally, customers can authenticate any Transparency-enabled product by scanning the Transparency code on the product using the Amazon mobile app, which will immediately tell customers if the product is authentic or not, thus building customer trust and loyalty.¹²⁸

PROJECT ZERO

First launched in 2019, Project Zero gives a subset of brands enrolled in the Brand Registry program access to three powerful tools developed specifically to protect intellectual property rights owners and preserve brand integrity.¹²⁹ First, as a member of Project Zero, "Amazon's automated

¹²³ Mosteller & Pastrick, *supra* note 119. While design patent and trademark infringement must be reported separately, if a product violates a trademark issue, that report, alone, should be sufficient to remove the product without needing to report the patent issue. *Id.*

¹²⁴ *Brand Protection Report*, *supra* note 4, at 8.

¹²⁵ Mosteller & Pastrick, *supra* note 119. The Transparency codes are unique two-dimensional alphanumeric, non-sequential codes, similar to a QR code, printed as small square barcodes, placed on the packaging of every unit manufactured for the registered product. *Transparency FAQ*, AMAZON, <https://brandservices.amazon.com/transparency/faq> [<https://perma.cc/GEL6-DWG9>] (last visited Jan 9, 2022).

¹²⁶ *Transparency*, AMAZON, <https://brandservices.amazon.com/transparency> [<https://perma.cc/D3WW-XUD6>] (last visited Jan 9, 2022). If a Transparency code is not being applied to every single unit, the brand may be kicked out of the Transparency program. Mosteller & Pastrick, *supra* note 119.

¹²⁷ *Brand Protection Report*, *supra* note 4, at 8.

¹²⁸ The customer can also scan the Transparency code to receive product details, such as manufacturing date, manufacturing place, and enhanced product information. *Transparency*, *supra* note 126.

¹²⁹ *Brand Protection Report*, *supra* note 4, at 9. ("For every 1 listing removed by a brand

protections will proactively block suspected bad listings before they get published” using machine learning techniques, as noted in the Brand Registry program.¹³⁰ Second, brands enrolled in the program are given the power to directly remove listings from the Amazon marketplace.¹³¹ Third, brands are given access to product serialization through Amazon’s Transparency program, which utilizes a two-dimensional code placed on each unit of a registered product that is then scanned prior to shipping to ensure the authenticity of the product.¹³²

However, to be a member of Amazon’s Brand Registry, Transparency, or Project Zero programs, the brand must have a valid government-registered trademark; as such, these programs offer no enhanced protection for the owners of other types of intellectual property.¹³³

IP ACCELERATOR

In addition to these trademark protections, Amazon launched its IP Accelerator program in October 2019 to connect small to medium sized businesses with intellectual property law firms in order to make it simpler and more cost effective for such businesses to protect their ideas.¹³⁴ While this program can assist in protecting other types of intellectual property such as copyright registration, design patents, and broad intellectual property protection strategies, the focus remains on trademark protection.¹³⁵ Because Amazon has already evaluated the credentials of the law firms participating in the program, if such a law firm works with an Amazon seller to file a trademark

through our self-service counterfeit tool, our automated protections removed more than 600 listings through scaled technology and machine learning that proactively addresses potential counterfeits and stops those listings from appearing in our store”). To qualify for access, these brands must have a government-registered trademark and at least 90% of the infringement violation reports submitted by the brand must have been accepted by Amazon. Mosteller & Pastrick, *supra* note 119.

¹³⁰ *Brand Protection Report*, *supra* note 4, at 9.

¹³¹ *Id.* (although the self-service counterfeit removal tool provides rights owners with significant power on the Amazon marketplace, “more than 75% of brands enrolled in Project Zero have never used the self-service counterfeit removal tool.”). Additionally, Amazon reserves the right to evaluate additional eligibility factors to prevent misuse of the tool. *Amazon Project Zero*, AMAZON, <https://brandservices.amazon.com/projectzerohttps://brandservices.amazon.com/projectzero> [https://perma.cc/7S7Q-KTN6] (last visited Jan 9, 2022). This information is then fed into the machine learning algorithm to assist in catching similar listings in the future. *Brand Protection Report*, *supra* note 4, at 9.

¹³² *Brand Protection Report*, *supra* note 4, at 8–9.

¹³³ Mosteller & Pastrick, *supra* note 119.

¹³⁴ Dharmesh Mehta, *Amazon Intellectual Property Accelerator*, AMAZON (Oct. 1, 2019) <https://www.aboutamazon.com/news/policy-news-views/amazon-intellectual-property-accelerator> [https://perma.cc/8UDK-NT2S].

¹³⁵ *Id.*

application, the seller will receive early access to Amazon's brand protections, including some of those available to the brands participating in Project Zero.¹³⁶

THE UTILITY PATENT NEUTRAL EVALUATION PROCESS

Amazon recognized that utility patents pose a unique challenge in identifying infringement because this type of patent protects the inner workings of the technology, meaning that the visual cues relied upon by machine learning tools used to identify trademark infringement cannot adequately protect utility patent owners.¹³⁷ In response, Amazon launched a pilot version of the Utility Patent Neutral Evaluation Process ("UPNE") in 2019 to allow utility patent owners to enforce their legally granted rights against alleged infringers on the Amazon marketplace.¹³⁸

The UPNE is, in effect, a simplified, non-binding arbitration process for resolving utility patent infringement complaints against third-party sellers on Amazon.¹³⁹ In contrast to the previous "internal quality-control approach[es]" used to combat trademark infringement, the UPNE utilizes a quasi-judicial process to resolve utility patent disputes.¹⁴⁰ Designed with small to medium sized patent owners in mind, the UPNE promises a low cost, efficient, confidential, and voluntary alternative to traditional patent litigation, requiring just \$4,000 and less than four months to reach a resolution.¹⁴¹

To keep the time and cost of the process down, the patent owner is limited to asserting infringement of only a single claim of one unexpired utility patent issued within the United States.¹⁴² Because this is still a pilot program, the patent owner must first be invited to participate in the process after submitting a statement to Amazon explaining the alleged infringement with specificity, noting the ASINs of the allegedly infringing products, the patent at issue, and a description of why the patent owner believe there is

¹³⁶ *Id.*

¹³⁷ *Brand Protection Report*, *supra* note 4, at 10.

¹³⁸ Longley, *supra* note 7.

¹³⁹ Hurles, *supra* note 105.

¹⁴⁰ Emerson, *supra* note 117, at 89.

¹⁴¹ Angélique McCall, *Navigating Amazon's Neutral Patent Evaluation in Real Life: Part I*, IPWATCHDOG (Feb. 11, 2020), <https://www.ipwatchdog.com/2020/02/11/navigating-amazons-neutral-patent-evaluation-real-life-part/id=118736><https://www.ipwatchdog.com/2020/02/11/navigating-amazons-neutral-patent-evaluation-real-life-part/id=118736> [<https://perma.cc/9DZN-AADK>]; Kiri Masters, *Amazon's New 'Utility Patent Neutral Evaluation' Process Stops Bogus IP Claims*, FORBES (Sept. 30, 2019, 12:35 PM), <https://www.forbes.com/sites/kirimasters/2019/09/30/amazons-new-utility-patent-neutral-evaluation-process-stops-bogus-ip-claims/?sh=2ace97764468> [<https://perma.cc/LSC7-WERP>].

¹⁴² Hurles, *supra* note 105.

infringement.¹⁴³ After submission of the complaint, Amazon provides the contact information of the patent owner to the accused third-party sellers in hopes that the parties will resolve the dispute on their own.¹⁴⁴ If no resolution can be reached, the patent owner can request to begin the UPNE process.¹⁴⁵

The patent owner and each alleged infringer are sent a document outlining the UPNE Procedures and the UPNE Agreement, which must be fully completed and executed within twenty-one days.¹⁴⁶ By signing the agreement, the alleged infringer agrees to participate in the program and, as such, the product may remain on the Amazon marketplace until a resolution has been reached; however, if the allegedly infringing seller chooses not to participate, the product will be removed.¹⁴⁷ In one patent owner's experience, during this three week period before signing the agreement, multiple accused sellers contacted the patent owner to resolve the dispute through licensing agreements and/or selling off limited remaining inventory.¹⁴⁸

Once both parties have executed the agreement, Amazon selects a skilled attorney proficient in patent law to act as the neutral third party evaluator to whom each party pays the \$4,000 deposit.¹⁴⁹ The evaluator then establishes the schedule for the various written submissions of each party.¹⁵⁰ Generally, the patent owner has twenty-one days to submit their initial argument, the alleged infringer has fourteen days to respond, and the patent owner has seven days to submit a final, optional reply.¹⁵¹ The patent owner's total submissions are limited to twenty pages and the alleged infringer's submission is limited to fifteen pages, not including claim charts and exhibits.¹⁵²

¹⁴³ McCall, *supra* note 141.

¹⁴⁴ See Angélique McCall, *Navigating Amazon's Neutral Patent Evaluation in Real Life: Part II*, IPWATCHDOG (June 3, 2020), <https://www.ipwatchdog.com/2020/06/03/navigating-amazons-neutral-patent-evaluation-real-life-part-ii/id=122107> [<https://perma.cc/3F9P-ABEK>].

¹⁴⁵ *See id.*

¹⁴⁶ Hurles, *supra* note 105. Although the UPNE Procedure is not published by Amazon itself, some Complaints in Federal Court have attached the Agreement and Procedures as exhibits and some law firms have published unverified versions of the UPNE Agreement and Procedures on their websites, *see, e.g.*, Complaint at Ex. 8–9, *Nanobebe Us Inc. v. Mayborn (UK) Limited, et al.*, No. 1:21-cv-08444 (S.D.N.Y. filed Oct. 13, 2020); *Amazon's Neutral Patent Evaluation Process Stops Baseless Intellectual Property Claims*, ROSENBAUM, FAMILARO & SEGALL, P.C. (Feb. 20, 2020), 20, 2020), <https://amazonsellerslawyer.com/blog/neutral-patent-evaluation-rules-agreement> [<https://perma.cc/E7DC-HBAB>].

¹⁴⁷ McCall, *supra* note 141.

¹⁴⁸ McCall, *supra* note 144.

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

¹⁵¹ Hurles, *supra* note 105.

¹⁵² Kroub, *supra* note 110. Because “patent infringement must be proven by showing

An alleged infringer is limited to three possible defenses: (1) non-infringement of the patent; (2) the accused product has been on sale for more than one year prior to the filing date of the patent as confirmed through independently verifiable objective evidence; or (3) a court of competent jurisdiction, including the United States Patent Office or the International Trade Commission, has determined that the patent is invalid or unenforceable.¹⁵³

The evaluator is charged with deciding whether the patent owner is likely to prove that the accused product infringes the asserted claim, considering only the information provided by the parties through their compact briefs.¹⁵⁴ The evaluator will then announce their decision within fourteen days of the patent owner's reply deadline.¹⁵⁵ If the decision is in favor of the patent owner, the accused product is taken down within ten days of the decision being rendered.¹⁵⁶ If the decision is in favor of the allegedly infringing third-party seller, however, the listing is entitled to remain on Amazon.¹⁵⁷

The prevailing party is refunded their original deposit of \$4,000 and the losing party's deposit is retained as payment for the evaluator.¹⁵⁸ If there are multiple losing parties, such as multiple infringing third-party sellers who did not prevail, a total of \$4,000 is retained by the evaluator and the remainder is donated to the Amazon Smile charity of the patent owner's choice; Amazon itself does not retain any portion of the deposit.¹⁵⁹ Additionally, if

that the [accused] product . . . infringes each and every element of the asserted claims," litigators often use "claim[] charts . . . to illustrate how a real-world product or service is allegedly infringing a patent claim." *Litigation Support Claim Charts*, TECHPATS, <https://www.techpats.com/litigation-support/claim-charts/#:~:text=In%20the%20patent%20litigation%20world,element%20of%20the%20asserted%20claims> [https://perma.cc/Y687-NUQD] (last visited Feb. 11, 2022). Claim charts provide graphical representations of the claim elements to clearly demonstrate the alleged infringement.

Id.

¹⁵³ Hurles, *supra* note 105; Kroub, *supra* note 110.

¹⁵⁴ Complaint Exhibit 9, *supra* note 146.

¹⁵⁵ McCall, *supra* note 144.

¹⁵⁶ See McCall, *supra* note 141.

¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

¹⁵⁹ *Id.*; see Complaint Exhibit 9, *supra* note 146 (in a situation where there are multiple accused third-party sellers, if the evaluator holds that *all* of the accused products are likely to infringe, the evaluator will retain \$4,000 divided evenly among the infringing sellers. If the evaluator finds that *some* of the accused products are likely to infringe and that others are not likely to infringe, the evaluator will "retain \$2,000 from the [p]atent [o]wner's payment and return the remainder", "return in full payments of participating [accused] [s]eller's whose [a]ccused [p]roducts were found not [likely] to infringe", and "retain \$2,000 divided evenly among participating [accused] [s]ellers [whose] [a]ccused [p]roducts were found [likely] to infringe." Any funds deposited from the losing sellers in excess of \$4,000 is given to the Amazon Smile charity of the Patent Owners choosing; "in no case may the [e]valuator retain more than \$4,000 after making a merits decision.").

the parties settle prior to the conclusion of the proceedings or if the patent owner withdraws or retracts their claims, portions of each parties fees are reimbursed depending on the phase of the process at which settlement is reached.¹⁶⁰

The losing party cannot file an appeal or request for reconsideration.¹⁶¹ However, both parties retain the right to file an action in federal court regarding infringement or invalidity of the patent.¹⁶² If an accused product is removed, “the listing may be restored only upon a showing of a court order or other arbitration ruling that the asserted is not infringed or is invalid.”¹⁶³

ANALYSIS

Benefits and Shortcomings of the UPNE

Benefits

One of the most obvious advantages of the UPNE is the extreme efficiency of the program.¹⁶⁴ Private arbitration has been statistically proven to be more cost effective and less time consuming than traditional litigation, especially in the area of patent infringement.¹⁶⁵ As noted previously, most patent dispute arbitrations cost less than 85 percent of the cost of litigating the same case, and the UPNE promises to costs less than even traditional arbitration.¹⁶⁶ The time savings match the cost savings—even for fairly complex technologies, arbitration can typically get a decision and permanent injunction in place within 365 days through arbitration, as opposed to the multiple years that are typically required for litigation.¹⁶⁷ And the UPNE again claims to

¹⁶⁰ Kroub, *supra* note 110; *see* Complaint Exhibit 9, *supra* note 146 (if the patent owner *withdraws or retracts* its claims such that the evaluation is terminated: (1) before the briefing begins, the evaluator may retain \$500 from the patent owner; (2) during the briefing period, the evaluator may retain \$1,000 from the patent owner; or (3) after the patent owner’s reply but before the evaluation is complete, the evaluator may retain \$2,000 from the patent owner. In each of these situations, the remainder of the patent owner’s deposit and all of the accused seller’s deposits must be returned to the respective parties. If, instead, the parties reach a *settlement agreement* that results in the termination of the evaluation: (1) before the end of the briefing period, the evaluator may retain up to \$1,000 divided evenly among the participants; or (2) after the patent owner’s reply but before the evaluation is complete, the evaluator may retain \$2,000, with \$1,000 coming from the patent owner and a total of \$1,000 divided evenly between each of the accused sellers.)

¹⁶¹ McCall, *supra* note 141.

¹⁶² *Id.*

¹⁶³ Hurles, *supra* note 105.

¹⁶⁴ *Brand Protection Report*, *supra* note 4, at 10.

¹⁶⁵ Train, *supra* note 38.

¹⁶⁶ Petrakis, *supra* note 50, at 29.

¹⁶⁷ Julia A. Martin, *Arbitrating in the Alps Rather than Litigating in Los Angeles: The Advantages of International Intellectual Property-Specific Alternative Dispute*

resolve disputes even more efficiently, with a final decision being rendered just two months after a dispute has been initiated.¹⁶⁸

Additionally, judicial precedent and statutory regulations generally encourage the use of alternative dispute resolution such as arbitration to help manage the docket backlog seen in many courts around the country.¹⁶⁹ From 1938 to 1989, the number of civil cases alone increased almost seven-fold, and there has been no indication that there will be a decline in litigation.¹⁷⁰ As such, public policy confirms that programs such as Amazon's UPNE promote judicial efficiency which benefits both the parties to the dispute and the general public.¹⁷¹

Additionally, the UPNE removes the ambiguity of Amazon's form-based complaint system presently used to handle intellectual property infringement complaints and, instead, provides significantly more transparency as to how an infringement claim will be handled.¹⁷² As a result, sellers note that the UPNE provides an efficient method of combating false infringement claims by competitors which the "quick trigger" approach fostered and, instead, allows sellers to keep their product on the market until a decision by the evaluator has been reached.¹⁷³ In turn, the UPNE assists in minimizing the losses faced by third-party sellers.¹⁷⁴

This advantage could be heightened if sellers were able to opt-in to the program before any claims are lodged against them in order to avoid the potential "quick trigger" removal.¹⁷⁵ By agreeing to participate in the UPNE in advance, these third-party sellers would provide their customers with more confidence that the goods being purchased are non-infringing—just like Project Zero and Brand Registry create confidence in the authenticity of a good.¹⁷⁶ Because the source of a third-party seller's goods are often unknown, this opt-in option would send a message that the seller is trustworthy and responsible.¹⁷⁷

Lastly, Amazon itself also benefits greatly from the UPNE.¹⁷⁸ By assuring that more of the third-party sellers on the marketplace are offering

Resolution, 49 STAN. L. REV. 917, 925 (1997).

¹⁶⁸ *Brand Protection Report*, *supra* note 4, at 10.

¹⁶⁹ Martin, *supra* note 167, at 926.

¹⁷⁰ *Id.*

¹⁷¹ Paradise, *supra* note 37 at 257.

¹⁷² Kroub, *supra* note 110.

¹⁷³ Masters, *supra* note 141.

¹⁷⁴ *Id.*

¹⁷⁵ Kroub, *supra* note 110.

¹⁷⁶ *Id.*

¹⁷⁷ Ben Robins, *Beat Third Party Sellers on Amazon*, EDGE BY ASCENTIAL, <https://www.ascentiaedge.com/insights/amz-insights-how-brands-can-beat-third-party-sellers-amazon> [https://perma.cc/Q4QH-NYAK] (last visited Jan. 9, 2022).

¹⁷⁸ Kroub, *supra* note 110.

legitimate, non-infringing goods, other sellers of legitimate goods will be more interested in selling on the marketplace.¹⁷⁹ The UPNE creates confidence that their legitimate listings will not be quickly removed due to a competitor's false allegations.¹⁸⁰

Shortcomings

While the UPNE fiercely protects patent owners, there is concern over the impact on the accused third-party sellers.¹⁸¹ Many of the small-to-medium sized businesses utilizing the Amazon marketplace derive a majority of their business from their product listings.¹⁸² Although not perfect, the UPNE offers significant improvements over Amazon's previous attempts to curb infringement, which left accused sellers with little to no recourse when a patent owner reported any infringement allegations, regardless of how baseless those false claims may have been.¹⁸³ Instead, the UPNE eliminates these bad-faith allegations by requiring the patent owner to incur some financial stake and giving the seller an opportunity to object to the allegations.¹⁸⁴ Similarly, the UPNE has the potential to create the inverse of the "quick trigger" dilemma currently facing third party sellers; the concern is that large companies with significant resources may try to exploit the UPNE by asserting frivolous patent claims while knowing that small businesses may not be able to afford the \$4,000 risk imposed by the UPNE.¹⁸⁵ But the ability to negotiate a resolution to the dispute prior to making the \$4,000 deposit required to initiate the proceedings provides accused sellers with an opportunity to see the merits of the patent owner's claims.¹⁸⁶ Although this concern for abuse is legitimate, the \$4,000 cost is a relatively low risk compared to the litigation and traditional arbitration alternatives.¹⁸⁷

Additionally, many critics believe that Amazon should not be in the

¹⁷⁹ *Id.*

¹⁸⁰ *Id.*

¹⁸¹ *Amazon's New Patent Infringement Process*, *supra* note 9.

¹⁸² See Daniel Keyes, *3rd-Party Sellers are Thriving on Amazon*, BUSINESS INSIDER (May 13, 2019, 9:44 AM), <https://www.businessinsider.com/amazon-third-party-sellers-record-high-sales-2019-5> <https://perma.cc/NK4P-6GZM>.

¹⁸³ Brittain, *supra* note 9.

¹⁸⁴ See Matthew Bultman, *Want to Avoid Costly Patent Cases? Amazon Offers a Hack*, LAW360 (May 11, 2019, 6:54 PM), <https://plus.lexis.com/api/permalink/a545ab96-e5cf-4b14-8cf1-e7445bc3011a/?context=1530671>.

¹⁸⁵ See Joshua Fruchter, *Amazon Takes Aim at Patent Infringement in its Marketplace*, NAT. L. REV. (July 12, 2019) <https://www.natlawreview.com/article/amazon-takes-aim-patent-infringement-its-marketplace> <https://www.natlawreview.com/article/amazon-takes-aim-patent-infringement-its-marketplace> [<https://perma.cc/BW2W-TJE4>].

¹⁸⁶ See McCall, *supra* note 141.

¹⁸⁷ See Paradise, *supra* note 37, at 261.

business of adjudicating intellectual property disputes because of the complexity of these types of matters.¹⁸⁸ Instead, critics believe this type of dispute should be handled by courts and arbitral tribunals which have established policies that assist in fleshing out infringement claims.¹⁸⁹ Similarly, critics have noted that traditional arbitral associations have precedential rulings, expert witnesses, and at least some discovery to allow each party to fully develop their case, but Amazon's UPNE lack these features.¹⁹⁰ It is reasonable to conclude that the simplicity of the UPNE may cause problems when patent owners with complex and technical infringement claims seek to enter the program.¹⁹¹ However, Amazon does not allow sellers to argue invalidity of the patent (unless a court or federal agency has already made that determination) and patent owners are limited to one claim from one patent.¹⁹² The result of these requirements is that the UPNE is highly focused on a single, specific issue.¹⁹³

Lastly, critics question whether the evaluator is truly "neutral" or, as contractors of Amazon, if they will be swayed by Amazon's interest.¹⁹⁴ It is well established that the attorney appointed as an evaluator has no relationship with Amazon.¹⁹⁵ Additionally, the results of this arbitration proceeding are non-binding.¹⁹⁶ As such, if either party is unhappy with the results of the process, litigation in federal court remains a viable option for resolving the dispute.¹⁹⁷ This is true in response to all criticisms of the program—nothing in the UPNE agreement prevents patent owners from suing for infringement or third-party sellers from filing declaratory judgments challenging patent validity.¹⁹⁸ Traditional dispute resolution methods remain available at any

¹⁸⁸ See Brittain, *supra* note 9.

¹⁸⁹ *Id.*

¹⁹⁰ *Id.*

¹⁹¹ See Bultman, *supra* note 184.

¹⁹² Hurles, *supra* note 105; Kroub, *supra* note 110.

¹⁹³ See Bultman, *supra* note 184.

¹⁹⁴ Fruchter, *supra* note 185.

¹⁹⁵ Tammy J. Terry & Lisa E. Margonis, *Unpacking Amazon's Patent Infringement Evaluation Process*, LAW360, March 19, 2021, <https://plus.lexis.com/api/permalink/35147b2c-5a85-4a42-adba-a621315ed08e/?context=1530671> ("Neutral evaluators are patent attorneys in private practice who are not employed by Amazon but who have been selected by Amazon specifically for this program to receive this work on a contract basis"). It is worth noting, however, that other than this preliminary information, there is currently very little information available about how the evaluators are selected, which is why increased transparency is the first recommended change to the UPNE program. See Bultman, *supra* note 184.

¹⁹⁶ See Bultman, *supra* note 184.

¹⁹⁷ *Id.*

¹⁹⁸ *Id.*

time to either party.¹⁹⁹

Recommended Changes to Improve the Program

Increase Transparency

As a pilot program, the specific details regarding the UPNE are unknown by the general public and patent professionals alike.²⁰⁰ Although Amazon has recently become more transparent by producing statistical reports on their brand protection measures in the Amazon Brand report, there is little information provided about the usage and success of the UPNE.²⁰¹ More information is needed, such as who the evaluators are and how they are selected; how accurate each evaluator has been regarding their decisions; how many settlements are reached after initiating the UPNE; how many decisions are being overturned by court orders; etc., in order to fully understand the unaccounted toll that such a streamlined, efficient process is taking.²⁰² Especially in light of the confidential nature of the program, there is currently no information regarding how many claims have been evaluated in the UPNE; but, having been in place for approximately three years and being able to reach a decision in an average of seven weeks, the UPNE must have enough data to answer at least some of these questions.²⁰³ While, generally, the program appears to be a great alternative to litigation, especially for small to medium businesses that may not be ready to play the “Sport of Kings,” without answers to many of these questions, it’s unclear whether either party is receiving the full benefit of the arbitration proceeding.²⁰⁴

Permit Extensions for Unrepresented Parties

The short turnaround time from initiation of the UPNE proceedings to a final decision by the evaluator is one of the key advantages of the program.²⁰⁵ However, a third-party seller accused of infringement is given just three weeks to decide whether to join the UPNE proceedings or have their product will be removed by default.²⁰⁶ And if they decide to join the proceedings, once the patent owner submits their brief, which is due approximately three weeks after the proceedings begin, the accused seller has just two weeks to draft and submit their own brief defending their position.²⁰⁷

The nuance and complexity of both patented technology and patent law

¹⁹⁹ *Id.*

²⁰⁰ *Id.*

²⁰¹ See e.g., *Brand Protection Report*, *supra* note 4.

²⁰² See Bultman, *supra* note 184

²⁰³ See *Brand Protection Report*, *supra* note 4, at 10.

²⁰⁴ See *Amazon’s New Patent Infringement Process*, *supra* note 9.

²⁰⁵ See *Brand Protection Report*, *supra* note 4, at 10.

²⁰⁶ Hurles, *supra* note 105.

²⁰⁷ *Id.*

itself make it difficult to properly defend against allegations such as patent infringement.²⁰⁸ Although the accused seller likely understands their product well, Amazon's attempts to make the UPNE a judicial process akin to standard patent dispute resolution means that providing a proper defense requires insight into a patent's prosecution history, its specification, and patent litigation in general.²⁰⁹ It is unlikely that a small-to-medium sized business owner, to which this program is geared toward, would have a legal team ready to take on such allegations on their own in such a short time frame.²¹⁰

If a third-party seller indicates that they are unrepresented but actively seeking counsel to handle the infringement disputes, they should be able to request and obtain an extension in order to give them time to find adequate counsel who can then learn the technology sufficiently enough to draft a responsive brief.²¹¹

Enable a "Vote of No Confidence" Option

While Amazon has a responsibility to patent owners to ensure that they are not complicit in allowing infringing products to linger on their marketplace, the evaluator should be permitted to end the evaluation with a vote of no confidence.²¹² If, after evaluating the arguments presented by a patent owner and an accused infringer through the UPNE briefs, the evaluator finds that the issues are too complex to provide a definitive yes-or-no answer to whether the accused product likely infringes, the evaluator should not be required to make a final decision.²¹³ This solution would effectively allow the evaluator to say that the issues within the patent are too complex to be decided in such a short, streamlined proceeding and, instead, should be handled by a court or other administrative body with competent jurisdiction which permits discovery, expert depositions, and procedural safeguards.²¹⁴

The results of such a decision would allow the product to remain on the marketplace unless or until the patent owner can provide a court order stating that there is infringement of the product.²¹⁵ Although this result would benefit the seller, it would incentivize both parties to reach an agreement to

²⁰⁸ Mark Rosenberg, *Insight on Amazon's Neutral Patent Evaluation Procedure*, JD SUPRA (Sept. 1, 2020), <https://www.jdsupra.com/legalnews/insight-on-amazon-s-neutral-patent-18919/> [<https://perma.cc/FT86-434X>].

²⁰⁹ *Id.*

²¹⁰ *See Amazon's New Patent Infringement Process*, *supra* note 9.

²¹¹ *See id.*

²¹² *Cf. Intellectual Property for Rights Owners*, AMAZON SELLER CENTRAL, <https://seller-central.amazon.com/gp/help/external/U5SQCEKADDAQRLZ> [<https://perma.cc/SK78-8XVP>] (last visited Feb 14, 2022).

²¹³ *Cf. Complaint Ex. 9*, *supra* note 146.

²¹⁴ *Cf. Bultman*, *supra* note 184.

²¹⁵ *Cf. McCall*, *supra* note 141.

settle.²¹⁶

CONCLUSION

Resolving patent disputes has historically been a long, expensive process that is inherently biased against those who cannot afford to fully litigate or defend their claims as a result of these roadblocks.²¹⁷ The Amazon UPNE provides a framework for a simplified, efficient, and cost-effective solution to these problems.²¹⁸ The program has the ability to remove counterfeit products from the Amazon marketplace, thus increasing customer loyalty and trust with the brands selling authentic products and with Amazon itself.²¹⁹ The result is an online marketplace that truly protects intellectual property rights and legitimate sellers, and a privatized arbitration process that can provide the baseline for other online marketplaces, thereby revolutionizing the way such retailers resolve patent disputes.²²⁰ With just a few changes to ensure that all participants in the program are being treated fairly, the UPNE will be on its way to achieving these ambitious goals.²²¹

²¹⁶ See *Amazon's New Patent Infringement*, *supra* note 9.

²¹⁷ See *Paradise*, *supra* note 36, at 251.

²¹⁸ See *Brand Protection Report*, *supra* note 4, at 10.

²¹⁹ Kroub, *supra* note 110.

²²⁰ See *id.*

²²¹ See *Terry & Margonis*, *supra* note 195.