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ARTICLE

WHO CONTROLS THE FUTURE OF GENERATIVE AI?

INFRASTRUCTURAL POWER AND THE CONTRACTS BEHIND BIG TECH–STARTUP PARTNERSHIPS

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The development of Generative AI has been largely driven by strategic partnerships between large technology companies and startups. A growing debate asks whether these alliances amount to Big Tech control over the trajectory of AI innovation, and legal scholarship has responded through two frames: novel corporate structures designed to insulate startups from market

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pressure, and antitrust scrutiny of the partnerships themselves. This Article argues that both frames provide only a partial account of how control operates. Drawing on case studies of the three flagship partnerships—OpenAI–Microsoft, Anthropic–Amazon, and Mistral–Microsoft—the article shows that control over Generative AI is exercised less through ownership or merger than through a combination of infrastructural power, non-equity investments, and contractual arrangements. Infrastructural power operates through conditional access to the complementary assets required to innovate at scale—compute, cloud, data, and distribution. Non-equity investments give incumbents indirect channels of influence and contractual arrangements often create technological dependence and give incumbents discretion over the continuation and terms of access to complementary assets. The Article advances a two-part framework in response. First, undermining structural dominance requires tools that disseminate access to complementary assets beyond case-by-case antitrust enforcement, including regulatory antimonopoly instruments and public AI infrastructure. Second, because collaboration will persist even where dependency is reduced—owing both to learning, experimentation, and reputational signaling, and to the fact that antitrust law will not always prevent or unwind such arrangements—the Article develops a framework of residual innovation governance, centered on contractual design, and of intermediated innovation governance, for settings of asymmetric bargaining power. The framework offers courts, agencies, and policymakers an analytical lens for evaluating AI partnerships that neither presumes collaboration is benign nor treats it as unlawful.

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I. Introduction

The rapid development and dissemination of Generative Artificial Intelligence models and technologies, which hold immense potential for transforming the economy and society,[1] have been driven by strategic alliances between large technology companies and startups[2] where the larger firms are often seen as holding the edge.[3] Recent developments (including Microsoft's influence in the reinstatement of Sam Altman as the CEO of OpenAI after being fired by OpenAI's non-profit board;[4] or the strategic partnership between Microsoft and

1. *See generally* Erik Brynjolfsson, Danielle Li & Lindsey R. Raymond, *Generative AI at Work* (Nat'l Bureau of Econ. Rsch. Working Paper No. 31161, 2023), https://www.nber.org/papers/w31161 [https://perma.cc/WNP5-H8EN] (finding, based on a study of 5,179 customer support agents using Generative AI, positive productivity effects with heterogeneous impacts across worker roles); *see generally* Cathy Yang et al., *GPT Adoption and the Impact of Disclosure Policies*, arXiv (Apr. 2, 2025), http://arxiv.org/abs/2504.01566 [https://perma.cc/B4B2-5LD4] (arguing that realizing the full productivity gains from AI tools depends on effective adoption through corporate regulations and AI governance policies); *see generally* Daron Acemoglu, *The Simple Macroeconomics of AI*, Stone Ctr., Apr. 2024, https://shapingwork.mit.edu/research/the-simple-macroeconomics-of-ai/ [https://perma.cc/Y95V-TNCG] (pointing out that "there are indeed much bigger gains to be had from generative AI, which is a promising technology, but these gains will remain elusive unless there is a fundamental reorientation of the industry").
2. *See generally Competition and Markets Authority*, AI Found. Models Update Paper, Apr. 11, 2024, at 17–18, https://assets.publishing.service.gov.uk/media/661941a6c1d297c6ad1dfeed/Update_Paper__1_.pdf [https://perma.cc/2R3N-XRREG4JJ-YSBQ] (finding 90 AI partnerships concluded between the GAMMAN firms [Google, Amazon, Microsoft, Meta, Apple and Nvidia], out of which a significant number is concluded with foundational model developer companies); *see also* Neeti Gupta, Florian Urmetzer & Shahzad Ansari, *Big-Tech Strategic Partnerships in Artificial Intelligence*, 20 Int'l J. Bus. & Mgmt. 57, 57–58 (2025) (undertaking a systematic survey of 74 studies to profile the motivations, practices and challenges of Big Tech AI partnerships).
3. *See generally* George Steer, *Big Tech's Market Dominance Is Becoming Ever More Extreme*, Fin. Times, (Oct. 31, 2025), https://www.ft.com/content/ae4d7961-cf59-4369-8e64-8a9c9da956d1 [https://perma.cc/3YVM-25F4] (claiming that "The new phase of market concentration began with the launch of ChatGPT in November 2022").
4. *See generally Charles Duhigg, The Inside Story of Microsoft's Partnership with OpenAI*, The New Yorker, (Dec. 1, 2023), https://www.newyorker.com/

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the French company Mistral–which many considered should have developed as an independent European champion insulated from the influence of U.S. large technology companies)[5] set the tone for a broader debate regarding the extent of Big Tech companies' role in the emerging Generative AI market and their potential effects on curtailing market dynamics and innovation.

Concern over Generative AI technologies existing solely in the control of a few major companies stems from two immediate types of harm. First, AI safety, legal, and ethical considerations[6] may be undermined if technology development is controlled by a handful of companies. With little transparency about their operations, extreme economic power, and strategic control over a crucial technology, companies are able to either mold the regulatory policy process according to their own interests,[7] escape regulatory enforcement,[8] or sustain strategic non-compliance.[9] Second, by blocking or co-opting

magazine/2023/12/11/the-inside-story-of-microsofts-partnership-with-openai [https://perma.cc/KW56-VSMK4CDP-2N2P] (discussing the background of the strategic collaboration between Microsoft and OpenAI).

5. *See generally* Pieter Haeck & Gian Volpicelli, *EU Balks at Microsoft's Deal with French AI Startup*, POLITICO, (Feb. 28, 2024), https://www.politico.eu/article/policymakers-tech-react-to-splashy-microsft-mistral-ai-french-startup-deal/ [https://perma.cc/VT6B-VGUA] (reporting on controversies generated by the collaboration between Microsoft and Mistral in the context of the European Union).
6. For an overview of foundations for regulation of Generative AI, see generally Philipp Hacker et al., *Introduction to the Foundations and Regulation of Generative AI*, *in* The Oxford Handbook of the Foundations and Regulation of Generative AI (Philipp Hacker et al. eds., 2025).
7. Shaleen Khanal, Hongzhou Zhang & Araz Taeihagh, *Why and How Is the Power of Big Tech Increasing in the Policy Process? The Case of Generative AI*, 44 Pol'y & Soc'y 52, 63 (2025).
8. Michael B. Landau, *The Astounding Growth of "Big Tech" and the Lack of Enforcement of the Intellectual Property, Antitrust, and Contract Laws*, 30 Alb. L.J. Sci. & Tech. 1, 15–16 (2020).
9. S*ee generally* Elizabeth Pollman & Jordan Barry, *Regulatory Entrepreneurship*, 90 S. Cal. L. Rev. 383 (2017) (examining firms where changing the law is an important part of their business plan).

emerging startups, the potential of disruptive innovation and competitive market dynamics is undermined.[10]

While these concerns are often framed in terms of dominance or formal control, this Article adopts a different lens. It understands control over the future of Generative AI not primarily as ownership, merger, or corporate governance authority. Instead, control manifests primarily through a combination of infrastructural power, non-equity investments, and contractual arrangements. As a result, debates that focus exclusively on ownership or formal control risk overlooking the infrastructural foundations of dominance in this field.

This Article asks two questions. First, how can access to the assets required to innovate in Generative AI be disseminated beyond the small number of firms that currently control them? Second, how should the collaborations between startups and Big Tech that will persist in any event be governed? Existing scholarship, as the next paragraphs show, has insufficiently addressed either of these topics.

In legal scholarship, the governance of Generative AI startups—particularly with a view to insulating them from market pressure and Big Tech influence—has been examined primarily through two strands of literature. The first examines the tailored corporate structures that are emerging among startups developing Generative AI technologies.[11]

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10. Mark A. Lemley & Matthew T. Wansley, *Coopting Disruption*, 105 B.U. L. Rev. 457, 457 (2025) (discussing how the strategy of regulatory arbitrage has been increasingly used by large companies in different domains). Examining, more broadly, how AI governance decisions can impact industrial concentration, productivity growth and income inequality, see generally Erik Bryjolffson & Gabriel Unger, *The Macroeconomics of Artificial Intelligence*, International Monetary Fund (Dec. 2023), https://www.imf.org/en/Publications/fandd/issues/2023/12/Macroeconomics-of-artificial-intelligence-Brynjolfsson-Unger [https://perma.cc/3DDJ-F7NL].

11. *See generally* Jennifer S. Fan & Xuan-Thao Nguyen, *Novel Corporate Governance Structures*, 38 Harv. J.L. & Tech. 1027 (2024) (examining the governance structures of AI startups such as OpenAI and Anthropic and proposing a mandatory board-level AI safety committee for AI startups); *Amoral Drift in AI Corporate Governance*, 138 Harv. L. Rev. 1633 (2025) (claiming that OpenAI's and Anthropic's mission-protecting structures are unlikely to withstand commercial pressure); Cheng-Chi Chang & Yilin Lu, *Balancing Mission and Market: OpenAI's Struggle with Profit vs. Purpose*, 6 Corp. & Bus. L.J. 1 (2025)

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These structures seek to reconcile for-profit motives with a pro-social mission, particularly through governance arrangements often grounded in stakeholderism,[12] that allegedly insulate board of directors from shareholder and market pressure.[13] The structures are intended to protect startups from both shareholder profit-maximization and the influence of powerful Big Tech partners by relying on non-profit boards composed of independent members. The non-profit board members are tasked with advancing ethical and safe AI, while granting stakeholders a more prominent role in corporate governance.[14] Increasingly these corporate structures are seen with skepticism as market pressures have influenced companies to shed their pro-social commitments.[15] By creating a category of "super-stakeholders" whose interests often diverge from companies' purported pro-social mission, these novel corporate structures have been viewed as further entrenching the influence of market forces.[16]

The second strand of literature (still relatively incipient) could be broadly described as examining the competitive aspects of strategic partnerships in the Generative AI ecosystem, and analyzing potential situations where mergers, acquisitions and collaborations in this field could violate competition rules and/or undermine innovation.[17]

(discussing whether OpenAI's hybrid nonprofit and for-profit structure is compatible with its charitable mission and tax-exempt status); Lawrence J. Trautman & Larry D. Foster II, *Sam Altman, OpenAI, and The Importance of Corporate Governance*, 16 J.L. Tech. & Internet 133, 149 (2025) (analyzing the ouster and reinstatement of Sam Altman as a governance failure and drawing lessons for directors and regulators); Alexandra Andhov, *OpenAI's Transformation: From a Non-Profit to a 157 Billion Valuation*, 46 Bus. Law Rev. 2 (2025) (tracing OpenAI's shift from nonprofit to a multibillion commercial enterprise and the resulting tension with its founding mission).

12. Lucian A. Bebchuk & Roberto Tallarita, *The Illusory Promise of Stakeholder Governance*, 106 CORNELL L. REV. 91, 105 (2020).

13. *Id.*

14. *Amoral Drift in AI Corporate Governance*, *supra* note 11, at 1639–43.

15. Andhov, *supra* note 11, at 2.

16. *Amoral Drift in AI Corporate Governance*, *supra* note 11, at 1636.

17. *See generally* Thibault Schrepel & Alex 'Sandy' Pentland, *Competition between AI Foundation Models: Dynamics and Policy Recommendations*, 34 INDUS. & CORP. CHANGE 1085 (2025) (finding strong, dynamic competition among foundation models, while advocating for an important role for legal

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Indeed, some consider that large companies hold an extreme market dominance—blocking new entrants in the field—and hint at counteracting this through a more strict approach to competition law, potentially barring mergers or strategic alliances.[18] Across the board,

institutions in preventing the ecosystem to freeze around a handful players); Lemley & Wansley, *supra* note 10, at 457, 461; *see generally* Pierre Azoulay, Joshua Krieger & Abhishek Nagaraj, *Old Moats for New Models: Openness, Control, and Competition in Generative Artificial Intelligence*, 4 ENTREPRENEURSHIP & INNOV. POL'Y & ECON. 1 (2025) (arguing that incumbents' control over complementary assets is likely to concentrate the Generative AI market and confine entrants to dependent roles); *see generally* Abraham Song, *Competition in the Age of Generative AI*, (GW Competition & Innovation Lab Working Paper Series, No. 62, 2024), https://www.gwucic.com/post/competition-in-the-age-of-generative-ai [https://perma.cc/YN78-Q2MJ] (examining the relevance of startups in the Generative AI market and that increasingly global nature of the race in the field); *see generally* Dirk Auer & Mario A. Zúñiga, *AI Partnerships and Competition: Damned If You Buy, Damned If You Don't*, INT'L CTR. FOR L. & ECON. (AUG. 19, 2025), https://laweconcenter.org/resources/ai-partnerships-and-competition-damned-if-you-buy-damned-if-you-dont/ [https://perma.cc/8BUL-R3R9] (arguing that partnerships between Big Tech and startups are beneficial for competition and that expansive merger control could deter them without evidence of harm); *see generally* Sahin Ahmed, *Pseudo-Acquisitions in AI: Tech Giants' New Strategy-Partner, Poach, and Dominate AI*, MEDIUM (Aug. 31, 2024), https://medium.com/@sahin.samia/pseudo-acquisitions-in-ai-tech-giants-new-strategy-partner-poach-and-dominate-ai-60ada1eca83f [https://perma.cc/Z8FV-VVZ3] (examining AI partnerships as structures that deliver the benefits of acquisition while avoiding merger review); *see generally* Teodora Groza & Paul Oudin, *Big Tech-Small AI Partnerships*, U. OXFORD, (July 19, 2024), https://blogs.law.ox.ac.uk/oblb/blog-post/2024/07/big-tech-small-ai-partnerships [https://perma.cc/X284-WG9Q] (arguing that EU and U.S. merger rules are unclear regarding the level of collaboration that will warrant a merger probe); *see generally* Shourya Mitra, *Competition Concerns with Foundation Models: A New Feast for Big Tech?*, 21 EUR. COMPETITION J. 140 (2025) (examining whether Big Tech's control of inputs to foundation models raises competition concerns under EU law); *see generally* Mert Demirer et al., *The Emerging Market for Intelligence: Pricing, Supply, and Demand for LLMs* (Nat'l Bureau of Econ. Rsch., Working Paper No. 34608, 2025), https://www.nber.org/papers/w34608 [https://perma.cc/4GPY-LSAD] (examining the structure and dynamics of the LLM market and documenting rapid price declines and frequent leadership changes among models).

18. *See generally Letter from Elizabeth Warren, Senator & Robert Wyden, Senator to Open AI and Microsoft* (Apr. 7, 2025), https://www.warren.senate.gov/

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the position emphasizing more stringent antitrust regulation is far from uncontested. Some consider that these strategic partnerships present benign or positive aspects, largely helping startups to scale-up.[19] Others acknowledge the potential anti-competitive effects while considering that it may be "too much of a stretch" to capture them through merger control framework.[20] Others still consider that the best hopes for a vibrant AI ecosystem may be the emergence of a "rogue" Big Tech firm opting for engagement with smaller companies through an open model business.[21] This uncertainty as to the best responses to the potential anti-competitive aspects of these strategic partnerships is reflected in the regulatory authorities' examinations of this topic around the world.[22]

In practice, while many of these cases are still ongoing, regulators have been hesitant to immediately sanction these strategic collaborations,[23] simultaneously leaving open the possibility to do so in the future.[24] The structure of the collaborations between startups and large technology firms seems to be, at least in most cases, of a hybrid nature, combining competition and cooperation[25] such that there is no clearly distinguishable dominance by the larger companies over the nascent firms, circumventing application of antitrust rules. In

imo/media/doc/letter_from_senators_warren_wyden_to_openai_and_microsoft_on_anticompetitive_ai_partnerships.pdf [https://perma.cc/Y9LQ-NNXZ] (requesting additional information on the Microsoft and OpenAI partnership due to antitrust law concerns).

19. Auer & Zúñiga, *supra* note 17, at 5–6 ("But while antitrust considerations may, indeed, influence how these transactions are structured, it would be wrong to assume they are therefore detrimental to competition and consumers. Most mergers and acquisitions are either benign or pro-competitive").

20. Groza & Oudin, *supra* note 17.

21. Azoulay, Krieger & Nagaraj, *supra* note 17, at Abstract, 3, 20.

22. Auer & Zúñiga, *supra* note 17, at 8–18.

23. *Id.*

24. Press Release, Margrethe Vestager et al., Joint Statement on Competition in Generative AI Foundation Models and AI Products (July 23, 2024), https://competition-policy.ec.europa.eu/about/news/joint-statement-competition-generative-ai-foundation-models-and-ai-products-2024-07-23_en [https://perma.cc/56P8-3MF2].

25. Discussing the concept of contractual hybrids, see Pablo Marcello Baquero, Networks of Collaborative Contracts for Innovation 32–36 (2020).

sum, no regulatory action to date has resulted in the prevention or reversal of the existing collaborations between Big Tech and startups in the Generative AI field. While these two strands approach the problem from different angles—one through organizational design and insulation, the other through market structure and enforcement—they provide only a partial account of how control over Generative AI innovation is exercised in practice: through conditional access to the complementary assets required to innovate and scale,[26] non-equity investments, and contractual arrangements often creating technological dependence and governing collaboration under conditions of radical uncertainty.

This Article contends that these missing pieces must be treated as a first-order governance problem. The central policy debate tends to oscillate between discouraging strategic alliances through competition law and accepting them as necessary for innovation. This dichotomy is incomplete.

First, a legal framework capable of undermining structural dominance in Generative AI must contemplate how access to the complementary assets required for entry and scaling—including compute, cloud infrastructure, data, and distribution channels—can be disseminated through tools that go beyond case-by-case antitrust enforcement. Pragmatists have argued that absent support from large technology firms, many startups would be unable to scale and challenge established players.[27] From this perspective, strategic alliances are often defended as indispensable under conditions of rapid technological change and uncertainty.

These concerns featured prominently in recent policy debates, particularly in the European Union. For example, the Draghi Report

26. Azoulay, Krieger & Nagaraj, *supra* note 17, at 3 ("We describe how producing and improving foundational generative AI models requires several interrelated complementary assets, six of which are highlighted in this essay: [1] the compute environment, [2] model-serving and inference capabilities, [3] safety and governance procedures, [4] the development of benchmarks and metrics, [5] access to massive quantities of non-public training data, and [6] data network effects—whereby users' engagement with a model generates information that dynamically improves its performance.").

27. *See* Auer & Zúñiga, *supra* note 17, at 18.

prepared for the European Commission[28] suggested that elements of the emerging digital regulatory framework may have slowed innovation. More broadly, this position reflects a longstanding critique: regulatory approaches that constrain collaboration and scale in digital markets risk weakening innovation dynamics—a concern often contrasted with the more permissive regulatory environment traditionally associated with the U.S.[29]

Second, even if interventions succeed in reducing structural dependency, collaboration with large technology firms is likely to persist due to learning opportunities, tacit knowledge exchange, and reputational signaling under conditions of radical uncertainty.[30] The Article therefore develops a framework of *residual innovation governance*: the governance, principally through contractual design, of the collaborations that remain even after structural interventions reduce dependency—collaborations that the law should structure rather than prohibit. Where asymmetric bargaining power prevents startups from negotiating adequate contractual safeguards, the Article extends this framework through what it terms *intermediated innovation governance*: institutional arrangements, situated between the state and the market, that standardize and stabilize the contractual environment in which asymmetric parties collaborate.

The Article thus advances a distinct account of innovation governance in Generative AI under conditions of infrastructural concentration and uncertainty. Rather than treating collaboration as a problem to be addressed primarily through prohibition or ex post

28. Claiming that regulatory complexity may create obstacles for AI development, see Mario Draghi, *The Future of European Competitiveness*, EUR. COMM'N, Sept. 9, 2024, at 79, https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf [https://perma.cc/B73B-AERY].

29. Presenting a differing perspective, see Anu Bradford, *The False Choice Between Digital Regulation and Innovation*, 119 NW. U.L. REV. 377, 422, 428–34 (2024) (claiming that the gap between EU and US and China regarding AI development is not connected to regulation, but to other elements, such as lack of venture capital funding, punitive insolvency laws, lack of incentive to attract foreign talent and a lingering fragmentation of the internal market).

30. *See infra* Part II.B.1.

enforcement, it shifts attention to the legal and institutional mechanisms through which collaborative innovation is structured and sustained.

Although the analysis is not confined to any single jurisdiction, it speaks directly to debates in U.S. law concerning the limits of antitrust enforcement,[31] the role of contract design under conditions of uncertainty,[32] and the institutional governance of artificial intelligence by agencies such as the Federal Trade Commission and the National

31. *See generally* Lina Khan, *Amazon's Antitrust Paradox*, 126 YALE L.J. 710 (2017) (discussing in part the potential effect of restoring traditional antitrust principles); Herbert Hovenkamp, *Antitrust and Platform Monopoly*, 130 YALE L.J. 1952 (2021) (considering whether antitrust policies should do more, and whether these policies are the correct avenue, to promote competition amongst digital platforms); TIM WU, THE CURSE OF BIGNESS: ANTITRUST IN THE NEW GILDED AGE (2018) (examining how corporate concentration has been addressed in previous historical periods in the United States).

32. *See generally* Ronald J. Gilson, Charles F. Sabel & Robert E. Scott, *Contracting for Innovation: Vertical Disintegration and Interfirm Collaboration*, 109 COLUM. L. REV. 431 (2009) [hereinafter Gilson, Sabel & Scott (2009)] (claiming that vertical disintegration in different industries led to the emergence of a paradigm of contracting for innovation, marked by iterative collaboration, and combining formal and informal incentives to undermine opportunism between contracting partners); Ronald J. Gilson, Charles F. Sabel & Robert E. Scott, *Braiding: The Interaction of Formal and Informal Contracting in Theory, Practice, and Doctrine*, 110 COLUM. L. REV. 1377 (2010) [hereinafter Gilson, Sabel & Scott (2010)] (examining how contract scholarship neglected the possibility of interaction between formal and informal contracting, considering different contexts where this "braiding" is observed and how courts respond to it); Charles F. Sabel, Robert E. Scott & Ronald J. Gilson, *Text and Context: Contract Interpretation as Contract Design*, 100 CORNELL L. REV. 23 (2014) (claiming that rules of contract interpretation should be tailored to the transaction's uncertainty, market scale, and parties' sophistication rather than uniformly favoring either textualism or contextualism); Matthew Jennejohn, *The Private Order of Innovation Networks*, 68 STAN. L. REV. 281 (2016) (claiming that braiding theory does not fully explains variations of contract design in interfirm innovative agreements, proposing a model of multivalent contracting); Lisa Bernstein, *Beyond Relational Contracts: Social Capital and Network Governance in Procurement Contracts*, 7 J. LEGAL ANALYSIS 561 (2015) (examining contracts between original equipment manufacturers and their suppliers where there is minimal reliance in the legal system but instead on highly interconnected networks of firms and other private governance instruments that govern the collaborative relationship).

Institute of Standards and Technology.[33] This Article does not argue that antitrust, corporate governance, or open-source strategies are misguided, but that each addresses only part of an innovation governance problem that is also financial, contractual, and infrastructural in nature.[34]

Thus, the Article makes three contributions. First, it examines the contractual architectures of three emblematic strategic partnerships in the Generative AI market—OpenAI–Microsoft, Anthropic–Amazon, and Mistral–Microsoft—identifying recurring patterns in how these collaborations are structured and the incentives that sustain them. Second, it reframes control over Generative AI innovation as primarily infrastructural, financial, and contractual in nature. Third, as a prescriptive contribution, it proposes a two-part framework: expanding access to complementary assets through antimonopoly regulation and public AI infrastructure, while subjecting the collaborations that remain to residual and intermediated innovation governance. These contributions have direct implications for how courts, agencies, and policymakers should evaluate collaboration in the Generative AI ecosystem.

Beyond its contribution to the literature on innovation governance, this Article has direct implications for how courts,

33. *See generally* Matthew U. Scherer, *Regulating Artificial Intelligence Systems: Risks, Challenges, Competencies, and Strategies*, 29 HARV. J.L. & TECH. 353 (2015) (discussing practical and conceptual challenges to regulate artificial intelligence); *AI Risk Management Framework*, NIST, https://www.nist.gov/itl/ai-risk-management-framework [https://perma.cc/UPG4-WMJH] (exploring the public risks posed by AI and whether governments are competent in addressing these risks) (last visited Sept. 5, 2026); *Ensuring a National Policy Framework for Artificial Intelligence*, THE WHITE HOUSE: PRESIDENTIAL ACTIONS (Dec. 11, 2025), https://www.whitehouse.gov/presidential-actions/2025/12/eliminating-state-law-obstruction-of-national-artificial-intelligence-policy/ [https://perma.cc/LC75-2D4B] (aiming to create a "minimally burdensome" national framework to regulate AI in the United States).

34. *See generally* David Gray Widder & Nathan Kim, *How Big Cloud Becomes Bigger: Scrutinizing Google, Microsoft, and Amazon's Investments*, (July 31, 2025), https://papers.ssrn.com/abstract=5377426 [https://perma.cc/2C79-SLX7] (documenting and examining the convergence of infrastructural, contractual, and financial power in the AI market around the three Big Cloud firms).

agencies, and policymakers should evaluate collaboration in the Generative AI ecosystem. Current antitrust and regulatory debates tend to ask whether strategic partnerships between large technology firms and AI startups amount to mergers, confer control, or produce cognizable exclusionary effects.[35] Such categories often neglect the source of power in these arrangements.[36] Where influence is exercised through conditional access to key complementary assets rather than formal control, traditional merger and monopolization frameworks risk both under-enforcement and misguided intervention. By reframing the problem around infrastructural access and residual innovation governance, the article offers an alternative analytical lens that can inform agency enforcement discretion, merger review, and the design of regulatory obligations governing AI infrastructure—without presuming that collaboration itself is either benign or unlawful.

Taken together, the analysis that follows explains how control over the future of Generative AI is increasingly exercised not through ownership or formal governance rights, but through infrastructural dependence and the contractual governance of collaboration.

The Article is divided into five parts. Part I draws on the literature on the legal structuring of innovation to examine the presence of startup–Big Tech collaborations and in-house development within the generative AI market. Part II examines the anatomy of the contracts establishing strategic partnerships between startups and Big Tech in the Generative AI field. For that purpose, three case studies regarding strategic alliances in the Generative AI market–OpenAI–Microsoft, Mistral–Microsoft, and Anthropic–Amazon are analyzed for how the deals establishing them are structured and what benefits both startups and Big Tech companies expect to derive from them. Part III departs from the analysis of the needs of startups identified in the case studies to examine various legal solutions and policy initiatives that could be

35. *See generally* Vestager et al., *supra* note 24 (discussing competition law challenges posed by foundation models and AI products in a joint statement by U.S., U.K., and EU regulatory authorities); Auer & Zúñiga, *supra* note 17, at 6–8 (advancing the claim that most AI partnerships are unlikely to qualify as mergers absent evidence of control).

36. *See infra* Part III.

undertaken to advance the innovation capabilities for startups in the Generative AI field. Part IV turns to residual innovation governance: how startup–Big Tech collaborations should be designed and governed, contractually and institutionally, once it is recognized that collaboration cannot be treated solely as a harm to be avoided. Part Five concludes.

II. Competition, Cooperation, and Control over Complementary Assets in the Generative AI Market

This Part examines the market structure of Generative AI innovation in order to explain why access to complementary assets plays a decisive role in shaping both competition and cooperation in this field. While public debates often focus on model ownership or corporate authority, effective participation in Generative AI development depends on a broader set of resources, including large-scale computations, cloud infrastructure, specialized hardware, data, distribution channels, and organizational capabilities. Control over these assets is highly concentrated among a small number of large technology firms, and this concentration structures the conditions under which startups can innovate, scale, and enter into strategic partnerships.

Against this background, two prominent responses to concentration in the Generative AI market are analyzed: open-source strategies and collaborative arrangements between startups and large technology companies. While both approaches can mitigate certain barriers to entry, neither fundamentally alters the underlying dependence on complementary assets. As a result, current responses tend to reconfigure—rather than eliminate—the channels through which large technology firms exercise influence over innovation trajectories. Understanding these dynamics is essential to assess the limits of existing legal approaches and to motivate the asset-dissemination and governance strategies examined in subsequent Parts.

This Part examines the role of large technology companies in the Generative AI market. Section A focuses on their capacity to produce vanguard technologies and on the structural advantages derived from their control over key complementary assets across different layers of

the AI supply chain. Section B then considers two dynamics that have been identified as potentially mitigating this prominence. First, proprietary models increasingly coexist with open-source alternatives, including models released by leading firms, which may facilitate access and downstream experimentation. Second, despite their privileged position, Generative AI technologies are often developed through strategic collaborations between large technology companies and emergent startups. Section C discusses how this pattern is frequently explained by reference to theories of disruptive and open innovation, which emphasize the role of partnerships and user engagement in environments characterized by rapid technological change.

A. The Concentration of Power in the Hands of Big Tech in the Generative AI Sector

It is now commonplace to acknowledge that our current era is one of increasing industrial concentration and income inequality, marked by the inability to maintain the shared growth that was typical of the post-WWII years.[37] Perhaps there is no better example of the current industrial concentration than that of the leading global multinational companies in the technology field, almost exclusively located in the U.S. and in China, which can be fairly qualified as "superstar" firms in an industry where the "winner takes the most" share of the market.[38]

Some studies specifically mention the GAMMAN (i.e. Google, Amazon, Microsoft, Meta, Apple and Nvidia), as the quintessential Big Tech firms.[39] These companies, when joined by Tesla, currently hold a total market value of $19.4 trillion, which is equivalent to about

37. Jedediah Britton-Purdy et al., *Building a Law-and-Political-Economy Framework: Beyond the Twentieth-Century Synthesis*, 129 YALE L.J. 1784, 1814 (2020).

38. Discussing the concept of superstar firms, see David Autor et al., *The Fall of the Labor Share and the Rise of Superstar Firms*, 135 Q.J. ECON. 645, 648–49 (2020).

39. Such firms are currently the six largest companies by market capitalization in the world, *see generally* Luca Ventura, *Largest Companies in The World*, GLOB. FIN. MAG. (Sep. 8, 2025), https://gfmag.com/data/biggest-company-in-the-world/ [https://perma.cc/VYY7-TZTH] (discussing the top position occupied by technology firms among firms ranked by market capitalization).

35% of the S&P index.[40] Their dominance is not limited to the Internet; the technology they hold becomes increasingly relevant for different sectors.

Big Tech firms likewise lead the research and development of frontier technologies in the field of AI.[41]

Their dominance is anchored in different factors. First, they retain the so-called complementary assets[42] (or infrastructural resources) that are necessary to develop and improve AI technologies. The development of AI technologies involves different stacks[43] (essentially an AI value chain)[44] composed of different elements or assets required to produce the technology. Typically, the AI stack is composed of four main layers: the hardware (including the underlying chips), the cloud infrastructure (including the data and computing bases on which AI models are trained), the AI models (also referred to as the 'intelligence' layer), and the application layer (through which users will directly interact with the AI technology).[45]

Across the first three layers, the AI stack presents a marked level of industrial concentration, with large technology firms controlling most of the crucial assets. For hardware, the semiconductor industry demonstrates significant market concentration. The Taiwan Semiconductor Manufacturing Company ("TSMC") dominates the chip manufacturing industry (foundry market); TSMC held roughly

40. Piero Cingari, *Magnificent Seven Now Worth Over $19 Trillion And They Make Up 35% of the S&P 500*, BENZINGA, https://www.benzinga.com/markets/tech/25/07/46760627/magnificent-seven-microsoft-meta-nvdia-earnings-sp500-market-cap [https://perma.cc/Q464-VB7V] (last visited Dec. 30, 2025).

41. *See Generally* Kalpana Tyagi, *Mapping Competition Concerns along the Generative AI Value Chain,* 10 LEXXION 125 (2025), https://core.lexxion.eu/article/CORE/2026/2/6 [https://perma.cc/9AY7-WAHG] (discussing technical innovations from Big Tech firms and their contributions to AI industry).

42. *See* Azoulay, Krieger & Nagaraj, *supra* note 17 at 9 (arguing that the "tight control" of incumbent firms over complementary assets will allow them to flourish while other firms entering the AI-market get stuck at the "foundation layer").

43. Tejas N. Narechania & Ganesh Sitaraman, *An Antimonopoly Approach to Governing Artificial Intelligence*, 43 YALE L. & POL'Y REV. 95, 108 (2024).

44. Chinmayi Arun, *The Silicon Valley Effect*, 61 STAN. J. INT'L L. 55, 73–75 (2025).

45. Narechania and Sitaraman, *supra* note 43, at 108.

two-thirds of the market share in 2025.[46] Similarly, in 2024, revenue in the chip design industry was highly concentrated: The top five firms captured around 90% of the revenue among the leading global IC designers.[47] The second stack, involving cloud computing, also displays significant levels of industrial and geographical concentration in the U.S: Amazon Web Services, Microsoft Azure, and Google Cloud Platform retain about 63% of the global market.[48] The third stack, involving AI models, equally portrays market concentration, as illustrated by the fact that enterprise usage of Large Language Models ("LLMs") is concentrated among the four top providers in this market (Anthropic, OpenAI, Google and Meta), which hold around 85-90% of enterprise usage.[49] The fourth stack, involving the development of AI applications, is the most decentralized, allowing for the most competition.[50] In any case, for the development of these apps, third-party companies must, in most cases, rely on incumbents to provide the other complementary resources in the other layers of the stack, creating a level of dependency which can be used by the largest firms

46. *Global Pure Foundry Market Share: Quarterly*, COUNTERPOINT https://counterpointresearch.com/en/insights/global-semiconductor-foundry-market-share [https://perma.cc/U6UY-6UWS] (last visited Dec. 31, 2025).

47. *Top 10 IC Design Houses See 49% YoY Growth in 2024*, EVERTIQ (Mar. 18, 2025), https://evertiq.com/news/2025-03-18-top-10-ic-design-houses-see-49-yoy-growth-in-2024 [https://perma.cc/7UH5-DYBU] ("In 2024, the top five IC design companies accounted for over 90% of total revenue among the top ten.")

48. Rasmus Leichter, *AWS vs Azure vs Google: Cloud Market Share (2025)*, CARGOSON (Oct. 31, 2025), https://www.cargoson.com/en/blog/global-cloud-infrastructure-market-share-aws-azure-google [https://perma.cc/Y289-8QXM] ("Together, The Big Three (AWS, Azure, and Google Cloud) control 63% of the rapidly growing cloud infrastructure market.").

49. Kerem Gülen, *Anthropic Leads Enterprise LLMs With 32% Market Share*, DATACONOMY (Aug. 4, 2025), https://dataconomy.com/2025/08/04/anthropic-leads-enterprise-llms-with-32-market-share/ [https://perma.cc/2F34-BLUP].

50. Azoulay, Krieger & Nagaraj, *supra* note 17, at 1 ("Our central claim is that while formal intellectual property and secrecy are unlikely to durably prevent innovative firm entry, incumbent firms' tight control over key complementary assets will likely usher in a highly concentrated market structure. Thus, incumbents will have the ability to confine new entrants to the 'application layer' of the industry in a pattern reminiscent of the smartphone industry, thus limiting widespread competition at the foundation layer of the Generative AI 'stack.'").

to bargain with the smaller companies or even to undermine their business model.[51] The exception is third-party companies relying on open-source models and data for developing their applications.[52]

The dominance of Big Tech firms is further anchored in a second major factor. These large companies can vertically integrate AI technologies into their existing services and platforms, facilitating the process of commercial distribution, and potentially using advantages in one domain to displace competitors in another.[53] One example, is Microsoft granting access to its Microsoft Azure platform, through which digital services and products are offered worldwide, in its partnerships with startups in the Generative AI field.[54] Large technology companies also have access to the funding required to advance innovative projects[55] and the ability to attract or scoop the top talent needed to drive these projects ahead.[56]

Within this broader scenario of concentration, the locus of structural power is narrower than the general reference to Big Tech firms would suggest. It is concentrated, specifically, in the three companies controlling the cloud layer of the AI stack—Amazon, Microsoft, and Google—which together hold about two-thirds of the

51. Narechania & Sitaraman, *supra* note 43, at 126–27.

52. *Id.* at 127–28.

53. Khan, *supra* note 31, at 792 ("The current approach to antitrust does not sufficiently account for how vertical integration may give rise to anticompetitive conflicts of interest, nor does it adequately address the way a dominant firm may use its dominance in one sector to advance another line of business. This concern is heightened in the context of vertically integrated platforms, which can use insights generated through data acquired in one sector to undermine rivals in another.").

54. *See infra* Part IV.

55. Tingfan Gao et al., *The Impact of Big Tech Corporate Venture Capital Investments on Innovation: Evidence from the Equity Investment Market*, 83 CHINA ECON. REV. 102, 111 (2024) ("Big tech has gradually realized the industrial innovation layout of their ecosystems through corporate venture capital investments [Jeon & Maula, 2022]. While providing funds and resources for startups, many cases exist in which startups gradually disappeared after obtaining venture investment funds and joining the camp of big technology platforms.").

56. Auer & Zúñiga, *supra* note 17 at 2 ("Since the start of the 2010s, most of the so-called 'big tech' firms [Amazon, Apple, Google, Meta and Microsoft] have invested in AI startups as a means to acquire top talent and to incorporate new AI techniques, inputs, or technology into their services.").

global cloud computing market, earning the designation, "Big Cloud."[57] Notably, these firms do not merely control the infrastructure upon which Generative AI development depends; they are the most prolific corporate investors in the field, deploying capital with a frequency and at a scale comparable to those of the largest venture capital firms and startup accelerators.[58] A recent empirical study, based on Crunchbase data, documented thousands of investment deals concluded by these three companies, totaling approximately $235 billion in funding, or about four times the amount attributable to the remaining so-called "Magnificent Seven" firms.[59] The same study indicates that, when these companies invest, they act as the lead investor in nearly 70% of the funding rounds, and as the sole investor in more than half of them—rates far higher than other large technology companies.[60] The positions acquired through these large investments typically lead to significant influence over the strategic direction of the invested companies.[61]

The form assumed by these investments also reinforces the described pattern of infrastructural dependence.[62] A substantial share of investments by Big Cloud providers is non-equity, consisting primarily of cloud computing credits distributed through accelerator programs and usable only on the investors' platform.[63] These investments thus function simultaneously as mechanisms of customer acquisition and lock-in.[64] Regulatory scrutiny has likewise identified the practice of so-called circular spending arrangements, under which the recipients of investment are required to spend a significant portion of the funds obtained on cloud services purchased from their own investor.[65] In this configuration, the three cloud incumbents occupy a

57. Leichter, *supra* note 48.

58. Widder & Kim, *supra* note 34, at 4.

59. *Id.* at 6–8 (Google: 3,501 deals; Microsoft: 1,681; Amazon: 745; other large technology firms combined: 215).

60. *Id.* at 13.

61. *Id.* at 13–15.

62. *See supra* Introduction.

63. Widder & Kim, *supra* note 34, at 9–10.

64. *Id.* at 9–12.

65. *See Partnerships Between Cloud Service Providers and AI Developers: FTC Staff Report on AI Partnerships & Investments 6(b) Study*, FED. TRADE COMM'N

footnote continued on next page

distinctive dual role in the Generative AI ecosystem: they are both the providers of the infrastructure required to innovate and the main financiers of the companies that depend on such infrastructure.

As a result, Generative AI is often viewed as a highly concentrated field, with little competition.[66] Concerns about the growing domination of Big Tech companies over the development of Generative AI Technologies are pervasive, with several studies examining potential policy and legal approaches to counteract them.[67]

(JAN. 2025), https://www.ftc.gov/reports/ftc-staff-report-ai-partnerships-investments-6b-study [https://perma.cc/PP5P-X555] ("The partnerships include cloud commitments that require AI developers to spend a large portion of their CSP partner's investment on cloud services from their partner. This feature of the partnerships—circular spending—is one avenue through which CSP partners may potentially aim to reduce the magnitude of potential loss invested directly into their partners and cloud infrastructure to serve their partners."); Widder & Kim, *supra* note 34, at 14 ("Like the accelerator programs, where large amounts of free cloud compute credits are in fact redeemable only on Big Cloud's platform, such circular spend stipulations comprise a form of "investment" which provides greater returns for the Big Cloud investor than may initially appear. Big Cloud entities use their influence to funnel money back onto their own platforms and recoup their investment, tying the company receiving investment to the Big Cloud platform in the process.").

66. Azoulay, Krieger & Nagaraj, *supra* note 17; *see generally* Kartik Hosanagar & Ramayya Krishnan, *Who Profits the Most From Generative AI?*, MIT SLOAN MGMT. REV. (Mar. 12, 2024), https://sloanreview.mit.edu/article/who-profits-the-most-from-generative-ai/ [https://perma.cc/UE8U-Q7ZZ] (discussing which market players tend to earn profits in the Generative AI market and where new entrants may have better prospects).

67. *See generally* Azoulay, Krieger & Nagaraj, *supra* note 17 (arguing that openness and engagement is the way forward in the field of AI); *see generally* Friso Bostoen, Lola Montero Santos & Anouk van der Veer, *Not "Big is Bad" but "Closed is Bad"? Exploring Dynamic Competition in Generative AI*, 8 MKT. & COMPETITION L. REV. 65 (2024) (arguing that competition policy for Generative AI should focus on dynamic innovation rather than firm size or openness alone and proposing policy initiatives such as interoperability, data-sharing, and other unbundling remedies, to be applied case-by-case); *see generally* David Gray Widder, Sarah Myers West & Meredith Whittaker, *Open (for Business): Big Tech, Concentrated Power, and the Political Economy of Open AI*, (Aug. 18, 2023) (unpublished manuscript) https://www.ssrn.com/abstract=4543807 [https://perma.cc/36AG-6WCR] (examining the concept of 'open' AI).

The viewpoint that market concentration in the technology market is negative, however, is not universally shared—or at least, not in relation to all aspects. Petit and Teece, for instance, appreciate a digital economy marked by dynamism with productivity growth, rapid innovation and new entrant firms.[68] Instead of a monopoly, there would be a field formed by a few oligopolies strongly competing against each other, where some new entrant firms still could join the arena (a so-called "molligopoly").[69]

Furthermore, regarding the potential negative environmental impact brought by Generative AI technologies,[70] it has been implied that a limited number of tech companies in this field could minimize the dissemination of potential environmental damage that follows artificial intelligence development.[71]

Taken together, the control of the Generative AI market lies not in exclusive control over individual models, but in large tech companies' critical positioning across multiple layers of the AI supply chain. Control over complementary assets—such as compute, infrastructure, data, and deployment capabilities—enables these firms to set the conditions under which innovation occurs, even where formal ownership or market dominance may be contested. This form of infrastructural power complicates traditional competition-law analysis, which tends to focus on discrete markets and observable exclusion. Instead, governance strategies aimed at fostering innovation must address access to these assets directly.

68. Nicolas Petit & David J. Teece, *Innovating Big Tech Firms and Competition Policy: Favoring Dynamic over Static Competition*, 30 INDUS. & CORP. CHANGE 1168, 1169 (2021).

69. *Id.*

70. Akepa, *Environmental Impact of Generative AI – 30+ Stats & Facts*, THE SUSTAINABLE AGENCY (Aug. 10, 2026), https://thesustainableagency.com/blog/environmental-impact-of-generative-ai/ [https://perma.cc/6L9Z-AWED].

71. *See* JON SCHMID, TOBIAS SYTSMA & ANTON SHENK, EVALUATING NATURAL MONOPOLY CONDITIONS IN THE AI FOUNDATION MODEL MARKET 50 (2024) ("[t]o the extent that pre-trained models remain relatively homogenous, excessive competition in the market could result in emissions exceeding the socially optimal level"), https://www.rand.org/pubs/research_reports/RRA3415-1.html [https://perma.cc/K98J-MN2P].

B. Beyond Dominance: Open-Source Generative AI and Big Tech's Strategic Reliance on Startups

The narrative about market domination of Big Tech over the development of Generative AI technologies is more complex than is often assumed. Two dynamics are frequently invoked as mitigating forces: (1) open-source strategies, and (2) startup–Big Tech partnerships. But closer examination shows that neither fundamentally displaces the concentration of complementary assets that structures innovation in this field.

1. Open-Source Foundational AI Models

Several entities currently produce Generative AI foundational models, ranging from large technology companies to startups and non-profits, offering them not only as closed source, proprietary models, but also as "open-source."[72] The availability of open-source foundational models has the potential to reduce market entry barriers, promoting choice, innovation,[73] and fighting bias and censorship. These advantages are highlighted by the private companies that offer open-source models along with closed, proprietary ones.[74] Even if freely available, the open models tend to lag behind the performance of the proprietary versions.[75] Still, openness as such could arguably minimize the influence of large technology companies in the

72. Schrepel & Pentland, *supra* note 17, at 1087.

73. See Eur. Comm'n, DG Competition, *Competition in Generative AI and Virtual Worlds Competition Pol'y' Brief No. 3/2024* (Sept. 2024), https://data.europa.eu/doi/10.2763/679899 [https://perma.cc/G5Y3-CFR2].

74. *See Bringing Open AI Models to the Frontier*, MISTRAL AI (Sep. 27, 2023), https://mistral.ai/news/about-mistral-ai [https://perma.cc/WK5C-DUAB] (last visited Jan. 2, 2026) ("We're committing to release the strongest open models in parallel to developing our commercial offering. We will propose optimized proprietary models for on-premise/virtual private cloud deployment. These models will be distributed as white-box solutions, making both weights and code sources available. We are actively working on hosted solutions and dedicated deployment for enterprises.").

75. John Werner, *Open AI Systems Lag Behind Proprietary and Closed Models*, FORBES (NOV. 6, 2024, 13:46 ET), https://www.forbes.com/sites/johnwerner/2024/11/06/open-ai-systems-lag-behind-proprietary-and-closed-models/ [https://perma.cc/6J9L-CJP6].

Generative AI field, democratizing access to resources (specifically, the foundational models) needed to produce further innovation.

The notion of openness in AI models has been used in a very loose way[76], to the point that it is hard to discern what it means except in each particular case. Some even claim that "the rhetoric of openness is frequently wielded in ways that, far from alleviating, instead exacerbate the concentration of power in the AI sector."[77] Rather than understanding openness as a unitary concept, it is better understood as a spectrum of potential levels of openness.[78]

Although debates about "open AI" frequently draw analogies to the open-source software movement, those analogies translate imperfectly to foundational AI models,[79] where openness concerns not only source code, but also training data, weights, compute, and deployment constraints.

According to a Policy Brief of the European Commission, four main degrees of openness can be identified,[80] ranging from fully open models (providing data, source code and training weights fully to the users) to fully closed models (providing no openly available resources). Accordingly, actors in the field occupy different points on this spectrum—from "fully open" releases (e.g., models accompanied by code and weights)[81] to access-only API offerings. The label "open source," however, is often deployed strategically, obscuring the practical limits on reuse, modification, and downstream commercialization, as exemplified by Meta's characterization of

76. Widder, West & Whittaker, *supra* note 67, at 11.

77. David Gray Widder, Meredith Whittaker & Sarah Myers West, *Why 'Open' AI Systems Are Actually Closed, and Why This Matters*, 635 NATURE 827, 827 (2024).

78. *See* Irene Solaiman, *The Gradient of Generative AI Release: Methods and Considerations*, FACT '23: PROCS. OF THE 2023 ACM CONF. ON FAIRNESS, ACCOUNTABILITY, AND TRANSPARENCY 111, 111 (2023), https://doi.org/10.1145/3593013.3593981 [https://perma.cc/2BXK-D2XH].

79. Widder, Whittaker & West, *supra* note 71 77, at 827 ("This Perspective examines 'open' artificial intelligence (AI). We find that concepts from open-source software are being applied in ill-fitting ways to AI systems.").

80. KOWALSKI, VOLPIN & ZOMBORI, *supra* note 73, at 4.

81. *See* Widder, Whittaker & West, *supra* note 77, at 829 (stating models like EleutherAI, HuggingFace, Stability AI, and university projects are high on the scale of openness and in some cases rely on additional features rather than licensing for revenue).

LLAMA as open-source.[82] Such characterization has been contested by different organizations for failing to grant users the rights to reuse the model for any purpose, in any endeavor, and for allegedly discriminating against them.[83]

Conversely, several private companies offer foundational open-source models parallel to their highest-performing, closed, proprietary versions. For example, OpenAI, a company that focuses its business model mostly on revenue from proprietary licensing, recently launched new open-source models under the Apache 2.0 license.[84] Anthropic, while maintaining its flagship LLM Claude as closed source, has open-sourced some relevant associated tools, such as its Model Context Protocol, which connects its LLMs to external systems.[85] Mistral open-sourced several of its models; however, it does not provide training datasets or information regarding the training logic, even in relation to its so-called open-source models.[86] These examples illustrate that the meaning of open-source in Generative AI is often far more limited than public representations suggest. While benefits can be derived from some level of openness, these benefits

82. *Our Open Source Llama Models Are Helping to Spur Economic Growth in the US*, META (Mar. 18, 2025), https://ai.meta.com/blog/built-with-llama-writeseafynopsis-srimoyee-mukhopadhyay-united-states-economy/ [https://perma.cc/M5EP-U43S] (last visited Jan. 3, 2026).

83. Jordan Maris, *Meta's LLaMa License Is Still Not Open Source*, OPEN SOURCE INITIATIVE (Feb. 18, 2025), https://opensource.org/blog/metas-llama-license-is-still-not-open-source/ [https://perma.cc/QAB8-QDY5]; Krzysztof Siewicz, *Llama 3.1 Community License Is Not a Free Software License*, FREE SOFTWARE FOUND. (Jan. 24, 2025, 10:11 AM), https://www.fsf.org/blogs/licensing/llama-3-1-community-license-is-not-a-free-software-license [https://perma.cc/8JUV-6AUK].

84. Paul Baier, *OpenAI Releases Two Powerful Open Source AI Models: What You Need to Know*, FORBES (Aug. 7, 2025, 09:56 AM), https://www.forbes.com/sites/paulbaier/2025/08/07/openais-new-open-source-models-are-a-very-big-deal-3-reasons-why/ [https://perma.cc/4ALJ-C92U].

85. *Introducing the Model Context Protocol*, ANTHROPIC (Nov. 25, 2024), https://www.anthropic.com/news/model-context-protocol [https://perma.cc/KE45-E5XQ].

86. *Does Mistral Disclose Its Training Datasets?*, MISTRAL AI, https://help.mistral.ai/en/articles/347390-does-mistral-ai-disclose-its-training-datasets [https://perma.cc/R72W-ZA3J] (last updated Aug. 12, 2026).

provide an unconvincing argument that openness widely promotes inclusiveness in the Generative AI market.

Even the most expansive forms of open-source foundational models present significant limitations in their capacity to democratize innovation. Access to complementary assets—such as large-scale compute and cloud infrastructure—remains restricted,[87] while the costs of training and adapting models impede meaningful model reuse. Moreover, transparency regarding code or weights does not translate into insight on model behavior or underlying training logic.[88] As a result, openness offers only a limited mechanism for disseminating innovative capabilities across firms.

2. Strategic Partnerships Between Big Tech and Generative AI Startups

This section discusses Generative AI technologies produced through strategic partnerships between large technology companies and startups.

Although a small number of large technology firms have developed Generative AI models largely in-house,[89] it is increasingly difficult to identify leading AI technologies that do not rely structurally on models, capabilities, or partnerships involving specialized startups.[90]

Table 1 below displays a selection of the leading foundation-model developers, indicating the nature of each company and the access models under which their flagship systems are made available.

87. *See* Widder, West & Whittaker, *supra* note 66, at 4, 7, 12.

88. *See id.* at 2.

89. *See generally* Hugo Touvron et al., *Llama 2: Open Foundation and Fine-Tuned Chat Models*, ARXIV (Jul. 19, 2023), http://arxiv.org/abs/2307.09288 [https://perma.cc/VMQ8-NLDU] (demonstrating that a primarily in-house AI model usually has the same company responsible for the architecture, training, IP licensing, release strategy, and flagship technology rather than an external company).

90. Tomás Aguirre, On Labs and Fabs: Mapping How Alliances, Acquisitions, and Antitrust Are Shaping the Frontier AI Industry, (Jun. 11, 2024) (unpublished manuscript), http://arxiv.org/abs/2406.01722 [https://perma.cc/RK8F-L3GE; *see* Paulo Abecasis & Federico De Michiel, *Generative AI Partnerships: Separating Good from Bad*, CPI ANTITRUST CHRON. (July 24, 2024), https://copenhageneconomics.com/insight/generative-ai-partnerships-separating-good-from-bad/ [https://perma.cc/LZ5X-DEY9].

TABLE 1 – Selected Leading Foundation-Model Developers and Access Models (January 2026)

Developer	Type	Flagship model family	Access
OpenAI	Startup (Big Tech–partnered)	GPT-5; gpt-oss	API, Chatbot, Open weights (gpt-oss)
Anthropic	Startup (Big Tech–partnered)	Claude	API, Chatbot
Mistral	Startup (Big Tech–partnered)	Mistral Large; Magistral	API, Chatbot, Open weights
Cohere	Startup (Big Tech–partnered)	Command	API
Google	Big Tech	Gemini; Gemma	API, Chatbot, Open weights (Gemma)
Microsoft	Big Tech	Phi	API, Open weights
Meta	Big Tech	Llama	Open weights
Amazon	Big Tech	Nova	API
xAI	Startup	Grok	API, Chatbot
DeepSeek	Startup	V3.1; R1	API, Chatbot, Open weights
Alibaba Cloud	Big Tech	Qwen	API, Chatbot, Open weights
Moonshot AI	Startup	Kimi	API, Chatbot, Open weights
Z.ai	Startup	GLM	API, Chatbot, Open weights

Source: compiled by the author from the developers' official documentation and model release notes (as of January 2026); see also Stanford HAI, The AI Index Report, https://hai.stanford.edu/ai-index.

As Table 1 demonstrates, there are multiple startups in the field playing a significant role in the development of Generative AI innovation.[91] The initial version of Generative AI technologies originated from an independent start-up (Open AI).[92] That technical and commercial groundbreaking innovation went on to inaugurate the "era of LLMs" with the launch of ChatGPT 3.0.[93] Anthropic, a startup founded in 2021 by some of the former members of OpenAI, is considered one of the leading companies in the Generative AI field, after creating a family of large language models entitled Claude.[94] Additionally, Mistral, a French startup developing Generative AI technologies, is considered one of Big Tech's main competitors in the market evolving Generative AI models.[95] Finally, Cohere is a startup producing leading enterprise AI technology that "enhances human judgment, accelerates execution, and extends what individuals and teams can achieve on their own."[96]

While most of these companies are located in the U.S., there are also Generative AI startups at the forefront of innovation in different parts of the world.[97] Notably, firms such as Mistral, Cohere, and several

91. With claims, however, that Big Tech companies design their partnerships to dominate them and then evade competition law, *see* Jacob Schaal & Tekla Emborg, *Overcoming Big Tech AI Merger Evasions: Innovating EU Competition Law Through the AI Act*, VERFASSUNGSBLOG (Apr. 29, 2024), https://verfassungsblog.de/overcoming-big-tech-ai-merger-evasions-innovating-eu-competition-law-through-the-ai-act/ [https://perma.cc/2PNG-VBDQ].

92. *See generally* KAREN HAO, EMPIRE OF AI (2025) (providing an account of the history of OpenAI from its beginnings).

93. *See* Katikapalli Subramanyam Kalyan, *A Survey of GPT-3 Family Large Language Models Including ChatGPT and GPT-4*, 6 NAT. LANGUAGE PROCESSING J. 1, 2 (2024).

94. Ellen Glover, Anthropic: *What We Know About the Company Behind Claude AI*, BUILTIN, (Oct. 28, 2026), https://builtin.com/articles/anthropic [https://perma.cc/ZP4C-GYTF].

95. Madhumita Murgia & Anne-Sylvaine Chassany, *Mistral Becomes the Talk of Davos as Business Leaders Seek AI Gains*, FIN. TIMES (Jan. 19, 2024, 05:45 ET), https://www.ft.com/content/9e7ca55c-6987-4064-a181-47905eeb4662 [https://perma.cc/8M2Z-GHRP].

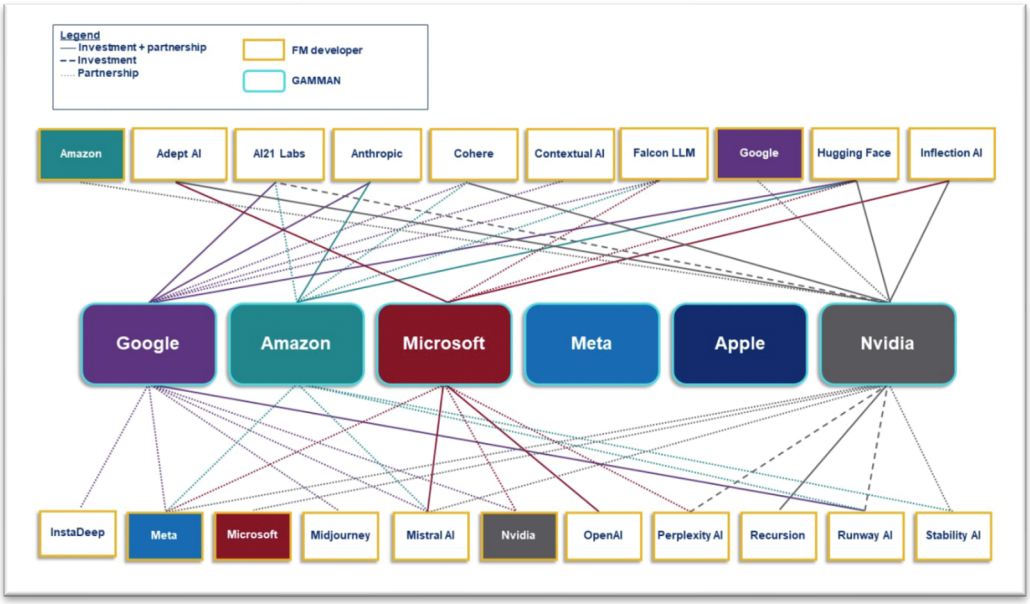
96. *About*, COHERE, https://cohere.com/about [https://perma.cc/WF25-WESY] (last visited Jan. 1, 2026).

97. Abraham Song, *supra* note 17.

Chinese developers[98] illustrate high-quality foundational models emerging outside traditional U.S. technology hubs, often alongside strategic partnerships with large platform providers.

Regulatory authorities surveying the field documented a significant number of strategic partnerships conducted between large technology companies and these emerging startups. The Report of the UK Competition Market Authority shows partnerships that "GAMMAN" firms conducted with foundational model developers,[99] as can be seen in Figure 1:

Figure 1



(Source: https://assets.publishing.service.gov.uk/media/66194a6c1d297c6ad1dfeed/Update_Paper__1_.pdf. Access in January 3, 2026).

98. Arjun Kharpal, *China Wants to Dominate in AI — and Some of Its Models Are Already Beating Their U.S. Rivals*, CNBC, https://www.cnbc.com/2024/12/17/chinese-ai-models-are-popular-globally-and-are-beating-us-rivals-in-some-areas.html [https://perma.cc/CZ2H-5XCP] (last updated Dec. 17, 2024, 09:58 ET).

99. *Competition and Markets Authority*, *supra* note 2, at 17–18.

Despite the professed independence, most leading startups established partnerships with Big Tech firms: OpenAI and Mistral have conducted collaboration agreements with Microsoft;[100] Anthropic has strategic partnerships with Google and Amazon[101]; and Cohere has collaborations with Amazon and Microsoft.[102] These arrangements reflect a broader pattern in innovation-intensive industries: Startups initially committed to independence and openness reach a point where access to capital, infrastructure, and commercialization channels controlled by Big Tech becomes indispensable.

The persistence of open-source initiatives and collaborative innovation does not undermine the infrastructural foundations of dominance in Generative AI. Instead, these arrangements reshape the modalities through which influence is exercised, while leaving dependence on compute, cloud infrastructure, and distribution largely intact.

As discussed in the next section, this pattern of disseminating partnerships between large technology firms and startups is consistent with theories of disruptive and open innovation, which explain why startups continue to play a central role in technological breakthroughs even as large firms retain control over the assets required to scale and commercialize innovation.

C. *Mind the Disruption: The Search for Innovation in the Generative AI Market*

While the importance of large technology firms in the innovative process is evident given their vast pool of resources, the rise and growing relevance of startups in the Generative AI field is better accounted for by theories of disruptive innovation[103] and open

100. *See infra* Parts III.A.1.b & A.2.b.

101. *See infra* Part III.A.3.b.

102. *Announcing the Cohere Partner Program: Boosting Enterprise AI*, COHERE (Oct. 7, 2025), https://cohere.com/blog/cohere-partner-program-boosting-enterprise-ai [https://perma.cc/JN8N-GQJA].

103. *See generally* CLAYTON M. CHRISTENSEN, THE INNOVATOR'S DILEMMA: WHEN NEW TECHNOLOGIES CAUSE GREAT FIRMS TO FAIL (1997) (introducing the concept of disruptive innovation).

innovation.[104] These theories emphasize that firms operating at the technological frontier face profound uncertainty and therefore rely on external sources of experimentation, learning, and application development.[105] In this context, collaboration with emerging companies is not incidental but a structural feature of innovation in the Generative AI market.

Against this background, the potential for startups to develop technologies that can compete—at least to a certain extent—with those developed by large technology firms should not come as a surprise to scholars of innovation. Despite incumbents' superior access to resources, financing, and complementary assets, innovation studies have long indicated that small firms play a central role in exploring novel and uncertain technological trajectories.[106] For incumbent firms, this implies that relevant technological experimentation is unlikely confined within organizational boundaries, creating incentives to monitor, engage with, and collaborate with startup actors rather than relying exclusively on internal development.

This section draws on two complementary strands of literature to examine the motivations behind such strategic collaborations. The first subsection revisits the theory of disruptive innovation to explain why small firms, despite resource asymmetries, may represent a credible source of displacement or reconfiguration for incumbent actors, particularly in contexts characterized by technological

104. *See* HENRY WILLIAM CHESBROUGH, OPEN INNOVATION: THE NEW IMPERATIVE FOR CREATING AND PROFITING FROM TECHNOLOGY 34–41 (2003) (advancing the concept of open innovation, through which companies pursue innovation by partnering with other firms instead of developing it in-house).

105. *Id.*

106. Julian Kolev et al., *Of Academics and Creative Destruction: Startup Advantage in the Process of Innovation* 29 (Nat'l Bureau of Econ. Rsch., Working Paper No. 30362, 2022), https://www.nber.org/papers/w30362 [https://perma.cc/33ZN-7Y3A] ("Taken together, our findings highlight that startups produce inventions that are both more valuable and more disruptive and novel than those pursued by either private-sector incumbents or academic institutions."); Ufuk Akcigit & William R. Kerr, *Growth Through Heterogeneous Innovations*, 126 J. POL. ECON. 1374, 1377 (2018) ("Our analysis helps inform long-standing debates about the role of small versus large firms for innovation. For instance, we show that the relative rate of major inventions is higher in small firms.").

uncertainty. The second subsection builds on the open innovation framework, highlighting valuable technological developments frequently emerge outside firm boundaries and therefore motivate collaboration with external partners. Within this framework, particular attention is paid to the legal and organizational arrangements through which firms structure and govern their engagement with startups and open-source communities.

1. Disruptive Innovation Theory and the Limits of Incumbent Advantage

Large technology companies often collaborate with startups in the field of Generative AI to avoid displacement or a reconfiguration in the market that could lead to loss of influence.[107] Drawing on the lessons of disruptive innovation theory, Big Tech firms pay close attention to entrants in the market that could enable disruptive technologies and may seek to coopt them as a strategy to remain ahead in the innovation cycle.[108]

Few theories have been more influential in the field of management, innovation, and firms' decision-making than the theory of disruptive innovation.[109] Formulated by Clayton Christensen,[110] and tracing back to Schumpeter's idea of creative destruction,[111] the theory poses that incumbent firms, seeking to serve their "most profitable and demanding customers with ever improving products and services,"[112] overlook two types of markets: low-end footholds involving less-

107. *See* Lemley & Wansley, *supra* note 10, at 457.

108. *Id.* at 476–77 (discussing how tech giants deploy different strategies to coopt firms developing potentially disruptive innovation).

109. Stephen Lile, Shahzad Ansari & Florian Urmetzer, *Rethinking Disruptive Innovation: Unravelling Theoretical Controversies and Charting New Research Frontiers*, 27 Innovation: Org. & Mgmt. 394, 394 (2025) (describing disruptive-innovation theory as "one of the most influential business theories of the 21st century").

110. *See generally* CHRISTENSEN, *supra* note 103 (introducing the concept of disruptive innovation).

111. JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM AND DEMOCRACY 81–86 (2nd Ed. 1947).

112. Clayton M. Christensen, Michael E. Raynor & Rory McDonald, *What Is Disruptive Innovation?*, HARV. BUS. REV. Nov.-Dec. 2015, at 44, 47, https://hbr.org/2015/12/what-is-disruptive-innovation [https://perma.cc/T74K-XUAY (staff-uploaded, dark archive)].

demanding consumers, and new-market footholds in which companies turn non-customers into customers.

In both cases, entrants initially offering simpler or lower-performing products—as illustrated by the canonical examples of the hard-drive disk[113] and personal computer industries[114]—are subsequently able to improve their offerings to the point of displacing incumbents. While the theory has evolved over time in response to emerging research,[115] this core insight remains: Disruption occurs where incumbents overlook emerging markets, even though it has been documented that incumbent firms increasingly adopt strategies (such as cooption) to avoid that fate.[116]

Under this framework, Generative AI technologies are unlikely to be classified *per se* as disruptive.[117] They are primarily enablers—general-purpose technologies more easily understood as forms of breakthrough, radical innovation[118]—whose implementation in downstream products and services could give rise (but not necessarily) to disruptive business models. Disruption is more likely found at the application layer than in enabling the technology itself.[119] Furthermore, in practice, Generative AI technologies have been mostly used by large technology companies to improve their own offerings rather than by entrants to disrupt incumbent's business

113. *See* CHRISTENSEN, *supra* note 103, at 3–28.

114. *Id.* at 125–45.

115. Clayton M. Christensen et al., *Disruptive Innovation: An Intellectual History and Directions for Future Research*, 55 J. MGMT. STUD. 1043, 1044 (2018).

116. Lemley & Wansley, *supra* note 10, at 460.

117. Michael B. Horn, *What Does Disruptive Innovation Theory Have to Say about AI?*, CHRISTENSEN INSTITUTE: RESOURCE LIBRARY (June 3, 2024), https://www.christenseninstitute.org/blog/what-does-disruptive-innovation-say-about-ai/ [https://perma.cc/6K64-KEQJ].

118. *See generally* Christian Hopp et al., *What 40 Years of Research Reveals About the Difference Between Disruptive and Radical Innovation*, HARV. BUS. REV., Mar.–Apr. 2018, https://hbr.org/2018/04/what-40-years-of-research-reveals-about-the-difference-between-disruptive-and-radical-innovation [https://perma.cc/RTP3-HFJJ (staff-uploaded, dark archive)] (discussing the distinction between the concepts of disruptive and radical innovation).

119. Horn, *supra* note 117.

models.[120] Moreover, disruptive innovation often develops in emerging markets that incumbents overlook;[121] this is far from being the case here, where large technology companies invest heavily in the Generative AI industry through multiple simultaneous strategies.

The argument, however, does not depend on Generative AI being disruptive in the technical sense. Rather, it is the *concern* about potential disruption that molds large technology companies' strategies in this market. Their subsequent behavior and pursuit of innovation through partnerships results from their awareness of the risks of displacement—and of the promise of Generative AI lowering entry barriers and enabling disruptive applications developed by others. To pursue their leadership in this market, large technology companies thus collaborate with firms at the forefront of the field through "open innovation."

2. Open Innovation and the Legal Structuring of Collaboration

Different studies have examined the legal strategies companies pursue to innovate.[122] Innovation studies have long indicated that it has become difficult to predict where the next wave of innovation will be produced and through which types of entities it will originate, as it may originate not only from manufacturers but from suppliers and users as well[123]—or even be produced jointly by them.[124] Considering

120. Ben Thompson, *AI and the Big Five*, STRATECHERY (Jan. 9, 2023), https://stratechery.com/2023/ai-and-the-big-five/ [https://perma.cc/T35Z-GLZB].

121. CHRISTENSEN, *supra* note 103, at 147–48.

122. *See generally* Ronald J. Gilson, *Locating Innovation: The Endogeneity of Technology, Organizational Structure, and Financial Contracting*, 110 COLUM. L. REV. 885 (2010) (developing a framework in which different arrangements jointly determine whether innovation occurs within an established firm or in a start-up); Joseph Bankman & Ronald J. Gilson, *Why Start-Ups?*, 51 STAN. L. REV. 289 (1999) (examining why employees may pursue innovations through venture-backed start-ups despite established firms' informational, scale, scope, and tax advantages); David Nows, *Corporate Innovation: One Path to More Sustainable Big Business*, 91 U. CIN. L. REV. 437 (2022) (analyzing entrepreneurial innovations developed or financed within large corporations).

123. ERIC VON HIPPEL, THE SOURCES OF INNOVATION 3–5 (1995).

124. *See generally* Yochai Benkler, *Peer Production, the Commons, and the Future of the Firm*, 15 STRATEGIC ORG. 264 (2017) (claiming that commons-based peer

footnote continued on next page

that it is unpredictable to locate where the next wave of innovation will occur, firms often adopt different simultaneous strategies to innovate, as explained below.

Companies frequently have their own internal Research & Development departments where their own employees pursue ways of improving and developing new technologies.[125] However, the incentives for firms to pursue innovation internally may not always be optimal. Firms' employees tend to operate according to actual consumer demands, ignoring potential diverging ways of organizing production and lacking incentives to develop innovations that would actually disrupt the business models of their own companies.[126]

To minimize such bias, incumbent firms often create separate departments or spin-offs to pursue innovative projects, sometimes even located geographically distant from their headquarters.[127] X (previously GoogleX), the innovation lab created by Google to pursue projects that could potentially disrupt Google's own business model—thereby placing the company in a privileged position to adapt as the technology advances—is one such example.[128]

However, it is well established that internal strategies to pursue innovation are limited in their effectiveness.[129] So, companies pursue open innovation, looking at the best ideas and projects developed by outside companies.[130] The forms of engagement with external parties may also vary.

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production challenges the conventional centrality of firms, proprietary control, and material incentives to innovation).

125. Mirit Eyal-Cohen, *Innovation Agents*, 76 WASH. & LEE L. REV. 163, 197–203 (2019).

126. Clayton M. Christensen & Joseph L. Bower, *Customer Power, Strategic Investment, and the Failure of Leading Firms*, 17 STRATEGIC MGMT. J. 197, 199 (1996); *see* Lemley & Wansley, *supra* note 10, at 463–66.

127. *See* Nows, *supra* note 122, at 444.

128. Oliver Franklin-Wallis, *Inside X, Google's Top-Secret Moonshot Factory*, WIRED, https://www.wired.com/story/ten-years-of-google-x/ [https://perma.cc/6L7H-KJEU] (last visited Oct. 2, 2024).

129. *See* CHESBROUGH, *supra* note 104, at 34–41 (discussing the four erosion factors affecting the closed innovation paradigm).

130. *Id.*

Acquiring promising companies is one of the obvious choices: Empirical evidence indicates Big Tech firms broadly apply this strategy.[131] Big Tech firms can simultaneously (partially or fully) finance several entirely independent companies to pursue innovation on their own, perhaps with an option to acquire or use the technology developed by the winner in this technological "race."[132] Companies could also simply acquire technologies developed by other firms, although conventional wisdom discourages this strategy: as acquiring companies would have limited opportunities to shape the design of these technologies, the resulting innovations may not be well suited to their specific needs.[133] Despite that, reports have indicated that large technology companies are increasingly licensing the technology and hiring the top talent of young companies, while avoiding acquiring them, possibly as a ploy to avoid regulatory scrutiny.[134] Companies may also pursue purely contractual relationships with external companies, establishing incentives for both parties to work closely and collaboratively throughout the partnership.[135]

As further discussed, these strategies are often combined by companies engaging closely with external partners to pursue innovation.[136] Often relationships with such external firms are not exclusive relationships, meaning that a larger firm may engage with several competing firms at the same time, hoping to benefit from its relationship with the first one able to develop an innovative output.

Innovation can also be generated through peer-production, for instance, with users making contributions through open-source

131. Pauline Affeldt & Reinhold Kesler, *Big Tech Acquisitions — Towards Empirical Evidence*, 12 J. OF EUR. COMPETITION L. & PRAC. 471, 471 (2021) ("In the ten years leading up to 2020, these five companies alone acquired more than 400 firms, predominantly in the technological sector.").

132. Gilson, *supra* note 122, at 908–10.

133. *See* CHESBROUGH, *supra* note 104, at 130–31.

134. Erin Griffith & Cade Metz, *The New A.I. Deal: Buy Everything but the Company*, N.Y. TIMES (Aug. 8, 2024), https://www.nytimes.com/2024/08/08/technology/ai-start-ups-google-microsoft-amazon.html [https://perma.cc/KS4P-JL7J].

135. Gilson, Sabel & Scott (2009), *supra* note 32, at 472.

136. Gilson, *supra* note 122, at 914–17.

software.[137] Incentives for user participation include increased reputation and skill development.[138] The deployment of this strategy, however, may be limited in contexts where costs of production are high and cannot be readily distributed across contributors,[139] such as some tasks related to Generative AI development. In this context, peer-production, while useful for certain discrete tasks, is unlikely to replace large firms' work.

The increasing pressure on firms to pursue innovation and peer-production would force companies to focus on core capabilities, particularly knowledge-based ones, and to reorient themselves towards cooperative continuity.[140]

The increasing centrality of strategic partnerships in Generative AI innovation does not, however, imply an absence of power asymmetries or governance concerns.[141] On the contrary, these collaborations frequently unfold in contexts marked by unequal access to complementary assets and significant informational asymmetries, which shape both the distribution of risks and the appropriation of innovative outcomes.[142] As a result, innovation in this field increasingly depends on contractual arrangements that must sustain cooperation under conditions of uncertainty while constraining opportunism. This shift from market structure to contractual governance sets the stage for the analysis in Part II.

III. Strategic Partnerships in the Generative AI Market: Contractual Structures and Incentives

Building on the structural analysis developed in Part I, this section examines how collaboration between large technology companies and startups in the Generative AI field is legally organized in practice.

137. Yochai Benkler, *Coase's Penguin, or, Linux and "The Nature of the Firm,"* 112 YALE L.J. 369, 371–74 (2002).

138. *Id.* at 373 n.7, 424–25.

139. Benkler, *supra* note 124, at 270.

140. *Id.* at 265.

141. *See generally* Widder & Kim, *supra* note 34 (examining how AI ecosystems' heavy reliance on investment from Big Cloud companies creates contractual, technical, and financial dependencies); Azoulay, Krieger & Nagaraj, *supra* note 17.

142. *See* Widder & Kim, *supra* note 34; Azoulay, Krieger & Nagaraj, *supra* note 17.

Where dominance is rooted in control over complementary assets rather than formal ownership, influence is increasingly exercised through contractual arrangements that govern access to compute, infrastructure, intellectual property, and commercialization channels.[143]

This Part analyzes a set of emblematic partnerships between large technology companies and Generative AI startups to illustrate how contractual design structures these relationships. The focus is not on determining whether such arrangements are anticompetitive or efficient, but on identifying recurring contractual patterns which manage asymmetries, allocate risks, and shape innovation trajectories. Mapping these contractual architectures establishes the groundwork for the governance analysis developed later in the Article.

Partnerships between startups and Big Tech firms are marked by significant asymmetries, particularly in economic resources and control over complementary assets.[144] For some, the agreements behind these strategic alliances are intentionally designed to avoid regulatory scrutiny, particularly by antitrust authorities, masking the reality of the larger companies' control over the entrant firms.[145] For others, these collaborations are what institutional economists refers to as hybrids:[146] instances of relational contracting,[147]or collaborations combining the logic of the discrete transactions in the market with the logic of hierarchy typical of the firm setting. Due to their hybrid character, these agreements often escape the competition law classifications that would render them void under competition law.[148]

143. *See supra* Part III.A.1.b, A.2.b; & A.3.b.

144. Gupta, Urmetzer & Ansari, *supra* note 2, at 62, 65.

145. Groza & Oudin, *supra* note 17 ("These Big Tech-Small AI partnerships involve a degree of collaboration which goes beyond traditional market interactions. As a result, antitrust agencies are increasingly concerned that what is presented as a 'partnership' is in fact a merger in disguise.").

146. OLIVER E. WILLIAMSON, THE ECONOMIC INSTITUTIONS OF CAPITALISM 158–59 (1998) (discussing hybrid modes of production where acquisition is avoided but there is strong cooperation between firms).

147. Oliver E. Williamson, *Transaction-Cost Economics: The Governance of Contractual Relations*, 22 J.L. & ECON. 233, 238 (1979).

148. *See* Auer & Zúñiga, *supra* note 17, at 8–18.

This section examines three case studies to (A) analyze how collaboration agreements between Generative AI startups and Big Tech firms are structured and (B) identify the motivations and incentives that drive these partnerships.

A. Collaborative Development of Generative AI: Case Studies

The partnerships established between leading generative AI startups—OpenAI, Anthropic, and Mistral—and major technology firms have been among the most extensively discussed in the literature. This Article examines how the collaboration agreements underlying these partnerships have been designed. While the agreements are not publicly available, the companies have reported extensively in media outlets and in statements regarding their content. In addition, the FTC has published a report,[149] based on information requested from some of these companies (often disclosed anonymously), identifying the key clauses contained in these agreements. This Article's analysis combines these sources to create an overview of the main contractual provisions governing these collaborations, with the caveat that this is partial and subject to limitations stemming from the non-public nature of the agreements and reliance on secondary sources.

The three partnerships examined below are not incidental pairings: They involve two of the three cloud incumbents whose combined control over cloud infrastructure and investment activity is prevalent in the Generative AI ecosystem as a whole.[150]

Before delving into the case studies, it is important to highlight some common threads among these firms. OpenAI, Mistral and Anthropic have more in common than simply representing three leading startups in the field of Generative AI technologies.

First, from the moment of their creation, these three companies committed to a particular "mission" of promoting a responsible and socially beneficial use of Generative AI technologies, which has materialized in different ways. In the case of OpenAI, the company itself was initially structured as a non-profit corporate organization, devoted to developing Artificial General Intelligence ("AGI") for the

149. Fed Trade Comm'n, *supra* note 65.

150. Widder & Kim, *supra* note 34, at 4.

collective benefit of humankind.[151] In the case of Mistral, the commitment to develop its technologies as open source (although the plan was, arguably to also develop commercial models next to its open models),[152] and to develop a European champion for AI, immune from the influences of American Big Tech.[153] Anthropic, while retaining only proprietary models for their LLMs, has open sourced some tools and protocols,[154] and has established safety and ethics as fundamental considerations in the development of its models.[155] This is an important distinction from other firms, which relegated these values to a secondary role.[156] Arguably, such commitments would have led to the decision not to open source their models, as that could lead to unsafe deployment and potential misuse of the technology.[157]

Second, these companies faced the pressure to upscale their operations, having to conclude partnerships with Big Tech to obtain the necessary resources, financing, expertise, and distribution channels needed for that purpose.[158] Some would argue that such partnerships undermined the mission of each of these companies. In the case of OpenAI, a corporate restructuring relinquished the initial non-profit corporate form and commercialized the systems developed

151. Chang & Lu, *supra* note 11, at 3.

152. *See* Alexandre Piquard, *Arthur Mensch, de Mistral AI : « En intelligence artificielle, nous pouvons rivaliser avec Google ou OpenAI »*, LE MONDE, (Feb. 26, 2024), https://www.lemonde.fr/economie/article/2024/02/26/mistral-ai-en-ia-nous-pouvons-rivaliser-avec-google-ou-openai_6218645_3234.html [https://perma.cc/JYK4-BBHC].

153. Liz Alderman & Adam Satariano, *Europe's A.I. 'Champion' Sets Sights on Tech Giants in U.S.*, N.Y. TIMES (Apr. 12, 2024), https://www.nytimes.com/2024/04/12/business/artificial-intelligence-mistral-france-europe.html [https://perma.cc/XK3Z-8DL5].

154. *See Introducing the Model Context Protocol*, *supra* note 85.

155. *Core Views on AI Safety: When, Why, What, and How*, ANTHROPIC, https://www.anthropic.com/news/core-views-on-ai-safety [https://perma.cc/RE9N-FZMU] (last visited Jan. 12, 2026).

156. Alius Noreika, *Anthropic: Pioneering Safe AI Through Responsible Innovation*, SENTISIGHT, https://www.sentisight.ai/anthropic-us-ai-safety-research-company/ [https://perma.cc/B6R4-HR2S] (last visited Sept. 4, 2026).

157. *Is Claude Open Source? What You Need to Know*, CLAUDE AI WEB, https://www.claudeaiweb.com/is-claude-open-source/ [https://perma.cc/GE6L-S3Y6] (last visted Sept. 11, 2026).

158. *See infra* Part III.A.1–3.

by the company.[159] In the case of Mistral, the conclusion of a partnership with a U.S. Big Tech firm (Microsoft) was seen as a detraction from its commitment to sovereignly develop Generative AI technologies.[160] Anthropic was founded by former members of OpenAI with the express objective to develop independently with a focus on safety, but it has received significant funding both from Amazon and Google, undermining this objective.[161]

Although the specific terms and institutional settings of these partnerships differ, the cases examined display a recurring contractual structure: Access to complementary assets is granted through staged, conditional, and revisable agreements that combine cooperation with significant discretion for the incumbent firm.[162] These arrangements frequently lead to commitments by startups to acquire cloud computing services from their Big Tech partner, and in some cases, to rely on the partners' platforms as their primary distribution channels. Such commitments deepen startup integration into the incumbent's ecosystem and increase their dependence on incumbent-controlled infrastructure.[163]

1. OpenAI

a. Background

OpenAI was founded in 2015 as a nonprofit corporation with the stated mission of ensuring that general artificial intelligence benefits all of humanity.[164] Over time, this structure proved insufficient to support the scale of investment required to develop and commercialize frontier Generative AI models, particularly given the costs of

159. Andhov, *supra* note 11, at 2.

160. *See* Gian Volpicelli, Mark Scott & Océane Herrero, *France Means Business with Mistral-Microsoft Deal*, POLITICO (Mar. 1, 2024), https://www.politico.eu/ article/why-france-chose-to-be-europes-ai-playground/ [https://perma.cc/QVQ6-2ZZL].

161. Mike Isaac & Cade Metz, *Anthropic Said to Be in Talks to Raise Funding at a $350 Billion Valuation*, N.Y. TIMES (Jan. 7, 2026), https://www.nytimes.com/2026/01/07/technology/anthropic-funding-valuation.html, [https://perma.cc/9SZM-CYLT].

162. *See infra* Part III.A.1–3.

163. FED. TRADE COMM'N, *supra* note 65; Widder & Kim, *supra* note 34.

164. *About*, OPENAI, https://openai.com/about/ [https://perma.cc/9VKY-V4HF] (last visited Oct. 2, 2024).

compute, talent, and infrastructure.[165] These constraints made both large-scale fundraising and commercialization effectively unattainable within the original nonprofit form.

In 2019, OpenAI adopted a hybrid structure combining a nonprofit parent with a for-profit subsidiary responsible for commercial operations.[166] This arrangement enabled OpenAI to raise capital and commercialize its models while formally preserving nonprofit oversight, including limits on investor returns and continued mission control by the nonprofit board.[167] Although this structure has been presented as a mechanism for reconciling commercialization with safety and public-interest objectives, it has also attracted skepticism as to whether mission constraints meaningfully limit commercial incentives.[168]

In 2025, OpenAI announced that its for-profit arm would transition into a Public Benefit Corporation while remaining controlled by the nonprofit, which retained both governance authority and a substantial equity stake.[169]

b. The Strategic Partnership with Microsoft

A strategic partnership between OpenAI and Microsoft began in 2019[170] and has since evolved through successive investment rounds and contractual renewals that deepened both financial and operational integration.[171]

165. *See* Andhov, *supra* note 11.

166. *Id.*

167. *Id.*

168. *Id.*

169. Sam Altman, *Evolving OpenAI's Structure*, OPEN AI https://openai.com/index/evolving-our-structure/ [https://perma.cc/6NC6-TM3R] (last visited Jan. 12, 2026).

170. *Microsoft and OpenAI Extend Partnership*, THE OFFICIAL MICROSOFT BLOG (Jan. 23, 2023), https://blogs.microsoft.com/blog/2023/01/23/microsoftandopenaiextendpartnership/ [https://perma.cc/7S2X-CKVP].

171. *The next Chapter of the Microsoft–OpenAI Partnership*, OPENAI, https://openai.com/index/next-chapter-of-microsoft-openai-partnership/ [https://perma.cc/DGD6-L5HX] (last visited Jan. 9, 2026).

Notably, OpenAI remains independent from Microsoft with this deal from a governance perspective. Although Microsoft had a non-voting seat on OpenAI's board, Microsoft later relinquished it.[172]

Microsoft's financial position evolved from a profit-sharing arrangement without governance rights[173] to a substantial minority equity stake following OpenAI's 2025 restructuring. Despite the scale of investment, Microsoft retains no majority ownership and no formal control rights over OpenAI's governance.[174]

The illusion of independence from Microsoft is countered by different elements of the agreement.[175] Several of these elements correspond to contractual categories anonymously documented by the FTC across cloud-AI developer partnerships, including provisions on exclusivity, revenue sharing, and the licensing of intellectual property rights.[176]

First, Microsoft is the largest cloud provider for OpenAI, a crucial resource for a company in the Generative AI field. OpenAI also committed to incrementally buy $250 billion in Azure services.[177] Despite their large investment, Microsoft is not the exclusive cloud provider for OpenAI, as illustrated by an agreement cunducted by OpenAI with Amazon Web Services for the provision of cloud

172. Tripp Mickle, *Microsoft Surrenders OpenAI Board Position*, N.Y. TIMES (July 10, 2024), https://www.nytimes.com/2024/07/10/technology/microsoft-openai-board.html [https://perma.cc/REG9-6GAX].

173. Tim Bradshaw et al., *How Microsoft's Multibillion-Dollar Alliance with OpenAI Really Works*, FIN. TIMES (Dec. 15, 2023), https://www.ft.com/content/458b162d-c97a-4464-8afc-72d65afb28ed [https://perma.cc/V98F-KG5D].

174. *Id.*

175. Mickle, *supra* note 172; *The next chapter of the Microsoft–OpenAI Partnership*, *supra* note 171.

176. *See generally* FED. TRADE COMM'N, *supra* note 65 (documenting, across the partnerships reviewed, provisions concerning exclusivity rights, revenue sharing, the licensing of intellectual property rights, and consultation or approval rights).

177. *The Next Chapter of the Microsoft–OpenAI Partnership*, *supra* note 171.

computing[178] and with Google for expanding data center capacity and computing power.[179]

Second, Microsoft has an exclusive license to several sets of intellectual property rights owned by OpenAI (regarding models, products, and AI research, but not consumer hardware) for a certain amount of time (depending on the specific IP right), but not those new IP rights that may arise in the future.[180]

Third, Microsoft can pursue AGI development with third parties. Although OpenAI also can pursue projects with third parties, it is subject to some limitations.[181]

Finally, there is a close collaboration between the companies, working iteratively in different projects. As stated by OpenAI, it has worked together with Microsoft in building different "supercomputing systems powered by Azure" to deploy its technology through the Azure platform, embedding several of OpenAI's technologies in different Microsoft applications or with developers being able to build on top of them. This is a learning relationship, which has been described in the following way:

"Our teams regularly collaborate to review and synthesize shared lessons—and use them to inform iterative updates to our systems, future research, and best practices for use of these powerful AI systems across the industry."[182]

Tensions surrounding OpenAI's formal independence became particularly visible during the November 2023 governance crisis, when the nonprofit board removed—and later reinstated—CEO Sam Altman.[183] Although Microsoft lacked formal control rights, its financial position and infrastructural integration with OpenAI

178. *AWS and OpenAI Announce Multi-Year Strategic Partnership*, OPENAI https://openai.com/index/aws-and-openai-partnership/ [https://perma.cc/94KH-9MZH] (last visited Jan. 9, 2026).

179. *OpenAI Partners with Google Cloud to Expand AI Data Center Capacity*, DATACENTERS.COM (July 19, 2025), https://www.datacenters.com/news/openai-s-strategic-partnership-with-google-cloud-powering-the-next-wave-of-ai-innovation [https://perma.cc/GJ8S-Z7XU].

180. Bradshaw et al., *supra* note 173.

181. *The Next Chapter of the Microsoft–OpenAI Partnership*, *supra* note 171.

182. *Id.*

183. Duhigg, *supra* note 4.

enabled it to exert substantial informal influence during the episode, raising questions about the practical limits of contractual and organizational independence in such partnerships.[184]

2. Mistral

a. Background

Mistral is a French startup founded in 2023 that quickly emerged as a leading developer of Generative AI models, initially positioning itself around openness and European technological sovereignty.[185]

Similar to OpenAI, Mistral started with a commitment to develop open-source AI models.[186] Despite being a relatively new startup, during a meeting at the 2024 World Economic Forum, Big Tech representatives stated that they considered Mistral to be one of the leading companies in the field.[187]

When Mistral conducted a collaboration agreement with Microsoft in February 2024, there was strong backlash from several members of EU institutions, which considered this move as contradictory to Mistral's alleged commitment to pursue innovation independently from Big Tech.[188] Members of the French Government, however, downplayed such arguments, stating that such collaborations were necessary for the company to scale its operations and represented a stamp of quality.[189]

b. The Strategic Partnership with Microsoft

Microsoft's strategic approach to its relationship with OpenAI is similar to its approach to Mistral, where it does not hold a decisive share in either company. Microsoft's direct monetary investment in

184. See *generally* Duhigg, *supra* note 4 (discussing the events surrounding Sam Altman's reinstatement as CEO of OpenAI and the strategies Microsoft devised in response).

185. Alexandre Piquard, *Mistral AI, Incarnation des Espoirs Français dans L'intelligence Artificielle*, Le Monde (Dec. 12, 2023), https://www.lemonde.fr/economie/article/2023/12/12/mistral-ai-incarnation-des-espoirs-francais-dans-l-intelligence-artificielle_6205391_3234.html [https://perma.cc/FVR2-UWN3].

186. Piquard, *supra* note 152.

187. Murgia & Chassany, *supra* note 95.

188. Volpicelli, Scott & Herrero, *supra* note 160.

189. *Id.*

Mistral is modest: Its $16 million investment[190] corresponds to less than 1% in a company now valued at over $14 billion.[191] This stake is particularly small when compared with Microsoft's 27% equity interest in OpenAI.[192]

Under the agreement, Microsoft provides Mistral with supercomputing infrastructure, including cloud, to facilitate the development of its models.[193] In addition, Microsoft further provides Mistral with access to its distribution platform, allowing the company to distribute its products to all Microsoft customers so that the company can scale its operations.[194] Finally, the companies work collaboratively on AI Research and Development, specifically, to train purpose customized models for clients (such as governments).[195]

Mistral, like OpenAI, has a non-exclusive agreement with Microsoft and engages with other competing companies to acquire cloud computing.[196]

While this allegedly undermines the influence of Microsoft over Mistral, there have been claims that this collaboration brings indirect power over the company.[197] Mistral's prestige was significant to the point of influencing in the negotiations of the EU AI Act.[198] Before the

190. Emilia David, *Microsoft's Mistral Deal Beefs up Azure without Spurning OpenAI*, THE VERGE, https://www.theverge.com/24087008/microsoft-mistral-openai-azure-europe [https://perma.cc/UQ8F-HZVA] (last visited Oct. 2, 2024).

191. Ruxandra Iordache, *AI Firm Mistral Valued at $14 Billion as Chip Giant ASML Takes Major Stake*, CNBC (Sept. 9, 2025), https://www.cnbc.com/2025/09/09/ai-firm-mistral-valued-at-14-billion-as-asml-takes-major-stake.html [https://perma.cc/AEZ2-3KW4].

192. *The Next Chapter of the Microsoft–OpenAI Partnership*, *supra* note 171.

193. Eric Boyd, *Introducing Mistral-Large on Azure in Partnership with Mistral AI*, MICROSOFT AZURE BLOG (Feb. 26, 2024), https://azure.microsoft.com/en-us/blog/microsoft-and-mistral-ai-announce-new-partnership-to-accelerate-ai-innovation-and-introduce-mistral-large-first-on-azure/ [https://perma.cc/XRM5-HF46].

194. *Id.*

195. *Id.*

196. *See Mistral AI Selects Google Cloud Infrastructure to Make Generative AI More Open and Accessible*, PR NEWSWIRE (Dec. 13, 2023), https://www.prnewswire.com/news-releases/mistral-ai-selects-google-cloud-infrastructure-to-make-generative-ai-more-open-and-accessible-302014018.html [https://perma.cc/5LNR-G8Z6].

197. In that sense, see Volpicelli, Scott & Herrero, *supra* note 160.

198. *See id.*

agreement on the final version of the text of the regulation, one of the final points of contention regarded the regulation of Generative AI models.[199] Specifically, France, Germany, and Italy were opposed, or at least hesitant, to approve rules to govern foundational AI models that could represent obstacles to the emergence of innovative companies in this field in the EU.[200] It has been reported that French company Mistral and German company Aleph Alpha strongly lobbied for more flexible rules regarding Generative AI in the EU AI Act.[201] Allegedly, such concerns weighed significantly in the rules incorporated in the final version of the AI Act,[202] which distinguished between General Purpose AI Models that presented a systemic risk—and were more stringently regulated—from ordinary models that would be subject to fewer rules[203]—covering most of the Mistral-developed models.

In addition, the French Government has, on different occasions, portrayed Mistral as an embodiment of French and European genius and inventiveness, worthy of emulation.[204]

The Anthropic–Amazon partnership reflects a similar contractual logic despite differences in organizational form and governance rhetoric, particularly in the way access to compute and infrastructure is structured through long-term, contingent commitments rather than outright control.

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199. *See id.*

200. *See id.*

201. *See generally Trojan Horses: How European Startups Teamed up with Big Tech to Gut the AI Act*, CORP. EUROPE OBSERVATORY, https://corporateeurope.org/en/2024/03/trojan-horses-how-european-startups-teamed-big-tech-gut-ai-act [https://perma.cc/JW5G-M6SP] (last visited July 22, 2026) (discussing how European AI startups Mistral AI and Aleph Alpha coordinated with major technology firms to lobby for weaker regulation of general-purpose AI models under the AI Act).

202. *Id.*

203. *See* Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 Laying Down Harmonised Rules on Artificial Intelligence and Amending Certain Legislative Acts (Artificial Intelligence Act), 2024 O.J. (L 1689) arts. 51–56.

204. *See generally* Piquard, *supra* note 185 (discussing Mistral's ambition to become a world champion in the development of generative AI).

3. Anthropic

a. Background

Anthropic was founded in 2021 by former OpenAI employees "who left over ethical and safety concerns"[205] to create their own company. The emerging firm had a clear focus on safety,[206] which some considered a contrast to other companies in the field which would relegate safety to a secondary role.[207]

Recently, a new funding round made the company reach the value of $965 billion[208] Anthropic is responsible for building the high-performing family of LLMs Claude, which have been hailed as particularly effective for a different number of tasks such as coding[209] or legal work.[210]

Anthropic has been established as a Public Benefit Corporation ("PBC"), similar to the current legal structure of OpenAI, with a mission of promoting AI development for the benefit of humanity.[211] Notably, the Company's Board of Directors is elected by the stakeholders and by its so-called Long-Term Benefit Trust.[212] The Trust is composed of five "financially disinterested members with an

205. Rafe Uddin, George Hammond & Cristina Criddle, *Amazon Weighs Further Investment in Anthropic to Deepen AI Alliance*, FIN. TIMES (July 10, 2025) https://www.ft.com/content/3e569928-dc0e-4baa-80c3-b51d24facb23 [https://perma.cc/BK4Z-52BU].

206. *Making AI Systems you can Rely on*, Anthropic, https://www.anthropic.com/company [https://perma.cc/EB3D-UGDE] (last visited Jan. 13, 2026).

207. Alius Noreika, *Anthropic: Creating AI Systems with the US AI Safety & Research Company*, SentiSight.ai (Apr. 11, 2025), https://www.sentisight.ai/anthropic-us-ai-safety-research-company/ [https://perma.cc/6FCM-YPVH].

208. *Anthropic Raises $65B in Series H Funding at $965B Post-Money Valuation*, ANTHROPIC (May 28, 2026), https://www.anthropic.com/news/series-h [https://perma.cc/PXE2-NJUS] (last visited July 22, 2026).

209. Rithula Nisha, *How Anthropic's Claude Opus 4.5 Beats the Best Human Coders*, ANTHROPIC (Nov. 25, 2025), https://aimagazine.com/news/anthropics-new-claude-opus-4-5-beats-the-best-human-coders [https://perma.cc/9VYB-U752].

210. *Anthropic's Claude 87% Better at Legal Tasks,* ROBIN (Feb. 24, 2025) https://robinai.com/news-and-resources/news/anthropics-claude-87-better-at-legal-tasks [https://perma.cc/CDH9-P8AH] (last visited Jan. 13, 2026).

211. *Making AI Systems you can Rely on*, *supra* note 206.

212. *Id.*

authority to select and remove a portion of our Board," ensuring the company's alignment with its mission of promoting responsible AI.[213]

As in the other cases, Anthropic has concluded several strategic partnerships with other companies, including Big Tech such as Amazon, Google,[214] Microsoft, and Nvidia.[215]

b. Strategic Partnership with Amazon

The partnership between Anthropic and Amazon started in 2023, with an initial investment of $4 billion.[216] Then another agreement in 2024 deepened the collaboration through another investment of $4 billion,[217] giving Amazon an estimated ownership of 15-19% of Anthropic, making it the largest shareholder of the company—ahead of Google's participation in the company.[218]

As in the other cases, Amazon has a minority shareholder position in the startup, thus, without control over decisions made.[219] Nevertheless, there are several factors, discussed in the next paragraphs, that indicate that Amazon has a degree of influence over Anthropic.

First, Anthropic has named AWS as its primary cloud provider and, as of the 2024 agreement between the companies, its primary

213. *The Long-Term Benefit Trust*, ANTHROPIC (Sept. 19, 2023), https://www.anthropic.com/news/the-long-term-benefit-trust [https://perma.cc/W6GB-UERD] (last visited Jan. 13, 2026).

214. Isaac & Metz, *supra* note 161.

215. Sebastian Herrera, Amrith Ramkumar & Robbie Whelan, *Nvidia, Microsoft Pour $15 Billion Into Anthropic for New AI Alliance*, WALL ST. J. (Nov. 18, 2025), https://www.wsj.com/tech/ai/nvidia-microsoft-and-anthropic-commit-to-roughly-45-billion-in-ai-partnership-281b7b1d [https://perma.cc/9SRY-P4VG].

216. *Expanding Access to Safer AI with Amazon*, ANTHROPIC, (Sept. 25, 2023), https://www.anthropic.com/news/anthropic-amazon [https://perma.cc/M95U-4CR6].

217. Amazon Staff, *Amazon and Anthropic Deepen Strategic Collaboration*, ABOUT AMAZON (Nov. 22, 2024), https://www.aboutamazon.com/news/aws/amazon-invests-additional-4-billion-anthropic-ai [https://perma.cc/RT7G-MXGE].

218. Britney Nguyen, *Why Anthropic's Fresh $183 Billion Valuation Is Good News for Amazon*, MORNINGSTAR (Sept. 3, 2025, at 11:10 AM), https://www.morningstar.com/news/marketwatch/20250903243/why-anthropics-fresh-183-billion-valuation-is-good-news-for-amazon [https://perma.cc/4BDP-NXHY].

219. *Expanding Access to Safer AI with Amazon*, *supra* note 216.

training partner for foundation models.[220] This includes the use of the software and hardware (chips) developed by Amazon for that purpose.[221] The FTC has identified a recurring feature of these collaborations: commitments by AI developers to purchase their partners' cloud services—sometimes by channeling investment proceeds back into those services—or to route their workloads through their partners' platforms.[222]

Second, Anthropic uses Amazon Bedrock as its main distribution channel for its products and services, giving Amazon a certain amount of influence as an intermediary, particularly with the Claude models.[223]

Third, both companies work closely on co-development. Anthropic itself states that they "[will] combine [its] respective expertise to collaborate on the development of future Trainium and Inferentia technology."[224]

The examination of these case studies allows identification of some consistent trends across these leading strategic partnerships in the field.

B. Incentives for the Startup-Big Tech Collaborations

In this Section, the examined case studies and the literature on innovation grounds an analysis of the incentives for startups and for Big Tech to enter into these collaborative agreements, instead of pursuing Generative AI innovation in isolation. This Article proposes that these incentives represent responses to structural constraints that each side encounters in the innovation space, indicating the organizational payoffs that companies may achieve by pursuing them.

220. *Amazon and Anthropic Deepen Strategic Collaboration*, *supra* note 217.

221. *Id.*

222. FED. TRADE COMM'N, *supra* note 65, at 2, 19–21 (identifying commitments by AI developers to purchase cloud computing services from their partner, including through the channeling of investment proceeds back into the partner's cloud offerings).

223. *Claude by Anthropic in Amazon Bedrock*, AMAZON WEB SERVS., INC., https://aws.amazon.com/bedrock/anthropic/ [https://perma.cc/9E8P-VPTY] (last visited Jan. 13, 2026).

224. *Expanding Access to Safer AI with Amazon*, *supra* note 216.

1. Incentives for Generative AI Startups

Startups often enter agreements with large technology companies to increase access to funding and the complementary resources needed to develop innovative technologies, to scale the commercialization and distribution of outputs through access to distribution channels, to access learning opportunities by engaging with world-class talent, and to enhance their reputation in the market. Table 2 presents the structural constraints that startups encounter in the field of Generative AI, how those create incentives for collaboration, and the potential organizational payoffs deriving from cooperative action.

Table 2 – Structural Constraints and Incentives Facing Generative AI Startups in Collaborations with Big Tech

Structural Constraint	Incentive to Collaborate	Organizational Payoff
Capital-intensive GenAI R&D	Securing funding	Feasibility of innovation
Limited access to complementary assets (compute, data, and infrastructure)	Access to complementary assets	Technical viability
Limited commercialization and market reach	Leveraging established distribution channels	Scalability
Bounded organizational learning capacity	Learning from world-class talent and processes	Capability upgrading
Limited reputational capital and signaling power	Reputation enhancement through association with Big Tech	Increased investor confidence, customer trust, and regulatory legitimacy

a. Access to funding

The establishment of partnerships with Big Tech can help companies scale up their businesses by obtaining the required funding

to invest in Generative AI development. Large technology companies often play a role akin to venture capital firms.[225] The costs involved can be significant,[226] ranging from hiring world-class talent, acquiring required hardware and software, paying for paid training data, cloud storage, and access to supercomputing resources. In some of the deals examined, investments were quite significant, reaching multi-billion dollars.[227] In the case of Mistral, the direct monetary investment by Microsoft is smaller, but the investment increasing access to other resources is significant.[228]

Thriving capital markets are often cited as a key factor in the U.S.'s technological leadership, while the EU's relative lag is attributed in part to its fragmented regulatory framework regarding capital markets.[229] In contrast, the U.S. has a much more prominent venture capital market, with more funds available to emerging tech firms.[230]

b. Access to complementary assets

One of the main concerns about competitiveness in the field of Generative AI is whether new entrants in this field are likely to have access to different complementary resources necessary to develop foundational Generative AI models.[231] Often, these partnerships are forms of obtaining access to such complementary assets (concerning data, cloud computing, among others), which are increasingly

225. Widder & Kim, *supra* note 34, at 4–7, 13–14, 20–21.

226. *See* Eur. Comm'n, *supra* note 73.

227. *See supra* Part III.A.1 & A.3.

228. *See supra* Part III.A.2.

229. Bradford, *supra* note 29, at 428–30.

230. *Id.* at 430–32.

231. Azoulay, Krieger & Nagaraj, *supra* note 17 at 9; David J. Teece, *Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy*, 15 RES. POL'Y 285, 292, 304 (1986) (arguing the need for innovating firms to have access to complementary assets in order to obtain economic returns from innovation); David J. Teece, *Explicating Dynamic Capabilities: The Nature and Microfoundations of (Sustainable) Enterprise Performance*, 28 STRATEGIC MGMT. J. 1319, 1346–47 (2007) (expanding the argument to claim that dynamic capabilities, including ability to partner up with other firms, may be needed to maintain superior enterprise performance).

concentrated in the hands of Big Tech.[232] Without such partnerships, access to such resources would become unfeasible given the challenges to access or cost to access them. This has led authors to claim that, while competition in the "*application layer*" may continue in the future, it may be restricted in the other layers of Generative AI development.[233] Partnerships with large firms is one way for smaller companies to overcome this lack of access, rendering the search for innovation technically viable.[234]

c. Access to distribution and commercialization channels

The collaboration agreements also facilitate startups' access to large online platforms through which they can globally distribute their products and services—increasingly important for companies willing to scale-up.[235] Notably, Microsoft makes available—both to OpenAI and Mistral—the possibility to commercialize their applications through the Azure platform. Anthropic's LLMs are commercialized, among others, on the Amazon Bedrock AI platform and Amazon Web Services.[236] Not only does this provide a global channel for distribution, but it also serves as an endorsement or "seal of quality" provided by a leading company in the field.[237]

d. Access to learning opportunities

In the different statements published regarding the deals examined, the startups refer to an active collaboration between the companies in different kinds of projects, requiring an iterative

232. Vili Lehdonvirta, Cloud Empires: How Digital Platforms Are Overtaking the State and How We Can Regain Control 15–18, 240–45 (2022).

233. Azoulay, Krieger & Nagaraj, *supra* note 17, at 9.

234. See *generally Profiting from Technological Innovation*, *supra* note 231 (discussing how partnerships with other firms may be necessary to attain superior performance).

235. Tom Eisenmann, Geoffrey G. Parker & Marshall W. Van Alstyne, *Strategies for Two-Sided Markets*, Harv. Bus. Rev., 2006, at 94–96 (indicating how access to users and complementary services is increasingly mediated by large platforms benefitting from scale and network effects); Annabelle Gawer & Michael A. Cusumano, *Industry Platforms and Ecosystem Innovation*, 31 J. Prod. Innov. Mgmt. 417, 429 (2014) (claiming that participation in platform ecosystems favors coordination and lower commercialization costs).

236. Amazon Staff, *supra* note 217.

237. *See infra* Part III.B.1.e.

dynamic and mutual learning. The opportunity for startups to have a working relationship and learn best practices from professionals from one of the leading global tech companies stands as a major advantage of strategic partnerships.[238]

e. Reputation

For emerging companies, the possibility of concluding partnerships with large, reputable technology companies signals to the market their quality and reliability, an argument supported by experts claiming that young firms able to have such collaborations have a better performance.[239] This signal, in turn, increases general confidence by consumers and investors in the firm.[240]

2. Incentives for Large Technology Firms

From the perspective of Big Tech firms, these agreements also serve different purposes.[241] They can provide access to innovations developed by companies at the technology frontier, hedge against uncertainty and risks associated with frontier innovation, facilitate entry into new markets, offer learning opportunities, and top talent that might otherwise be unavailable to large incumbents. Table 3 shows the strategic context in which Big Tech firms are embedded, creating incentives for collaboration to respond to the challenges presented and the potential organizational payoffs from such collaboration.

238. Andrew C. Inkpen, *Learning and Knowledge Acquisition through International Strategic Alliances*, 12 ACAD. OF MGMT. EXEC. 69, 69, 71–72, 79 (1998) (exploring "strategic alliances and their potential for learning and knowledge acquisition").

239. Toby E. Stuart, Ha Hoang & Ralph C. Hybels, *Interorganizational Endorsements and the Performance of Entrepreneurial Ventures*, 44 ADMIN. SCI. Q. 315, 315 (1999) (proposing that "faced with great uncertainty about the quality of young companies, third parties rely on the prominence of the affiliates of those companies to make judgments about their quality and that young companies 'endorsed' by prominent exchange partners will perform better than otherwise comparable ventures that lack prominent associates").

240. *Id.*

241. Gupta, Urmetzer & Ansari, *supra* note 2, at 57, 61.

Table 3 – Strategic Incentives for Big Tech Collaboration with Generative AI Startups

Strategic Context	Incentive to Collaborate	Organizational Payoff
Uncertainty at the technological frontier of GenAI	Open innovation through partnerships with frontier startups	Early access to potentially disruptive innovation
High uncertainty and risk of exploratory R&D	Portfolio strategy via simultaneous collaborations	Risk diversification and reduced innovation uncertainty
Strategic interest in new or jurisdiction-specific markets	Market entry and ecosystem positioning through local or specialized partners	Accelerated access to new users, use cases, and regulatory goodwill
Organizational learning constraints in large incumbents	Learning from startups operating at the frontier	Capability renewal and adaptation

a. Open innovation

As previously mentioned, leading companies in the market adopt different strategies to pursue innovation, knowing that new ideas and inventions often come from outside the borders of incumbent companies.[242] Promising partners working to develop new technologies are often sought out by large companies that want to stay ahead of competition. By establishing these partnerships, Big Tech seeks to stay at the vanguard of these new developments.[243]

b. Portfolio strategy to undermine uncertainty of experimental, frontier innovation

Investments in highly innovative technologies with uncertain trajectories involve substantial risks with very few becoming commercially valuable. Large technology companies often seek to

242. CHESBROUGH, *supra* note 104, at 19, 40–41, 49–50, 110–111, 135.

243. *See generally* Gupta, Urmetzer & Ansari, *supra* note 2 (examining several studies regarding strategic partnerships between Big Tech and startups and identifying their motivations and challenges).

hedge this risk by remaining flexible and by developing multiple strategic partnerships with competing firms at the same time.[244] In most cases, the collaborations take place simultaneously with startups that are competing among themselves.[245]

c. Facilitated access to foreign markets

In some cases, these collaborative partnerships provide an entrance into foreign markets.[246] They gain legitimacy through the stamp of approval of an established firm while also gaining insight into the local market peculiarities.[247] In the case of Mistral, which is highly valued by the French government,[248] Microsoft's partnership could potentially bring goodwill from both the side of users consuming Microsoft and Mistral's products, and from regulators and governments in the EU more broadly.

d. Learning opportunities

As mentioned before, these collaborations are driven in large part by the companies' mutual interest in learning from one another.[249] Startups that are operating at the vanguard of the market could present a promising learning opportunity for Big Tech firms.[250]

3. The Structure of Mutual Dependency

The incentives identified above help explain why collaborative agreements between startups and Big Tech firms have become a recurrent feature of Generative AI markets. Although the motivations to collaborate differ, they converge in a manner rendering such arrangements attractive for both parties. Table 4 illustrates this convergence, showing how each dimension has different

244. Werner H. Hoffmann, *Strategies for Managing a Portfolio of Alliances*, 28 STRATEGIC MGMT. J. 827, 827–28, 849–50 (2007); Dovev Lavie, *Alliance Portfolios and Firm Performance: A Study of Value Creation and Appropriation in the U.S. Software Industry*, 28 STRATEGIC MGMT J. 1187, 1191–93, 1207–08 (2007).

245. This has been the strategy of Microsoft. *See* Emilia David, *supra* note 190.

246. Srilata Zaheer, *Overcoming the Liability of Foreignness*, 38 ACAD. MGMT. J. 341, 358 (1995).

247. *Id.*

248. Volpicelli, Scott & Herrero, *supra* note 160.

249. Inkpen, *supra* note 238 at 69, 71–72, 79.

250. *See generally* CHESBROUGH, *supra* note 104 (discussing the advantages of open innovation).

organizational payoffs obtainable by startups or by Big Tech firms through strategic partnerships.

For startups, collaboration primarily provides enabling benefits, including access to funding, complementary assets, distribution channels, learning opportunities, and reputational legitimacy. For Big Tech firms, collaboration offers strategic advantages, such as access to frontier innovation, learning opportunities, coping with the uncertainty of innovation, and, in some cases, facilitated entry into new or jurisdiction-specific markets. This alignment of complementary, though asymmetric, payoffs contributes to the stability of these collaborations.

Table 4 - Distribution of Organizational Payoffs in Startup–Big Tech Collaborations

Dimension	Startups (Organizational Payoff)	Big Tech (Organizational Payoff)
Capital and resources	Access to funding and infrastructure enabling innovation	Efficient capital deployment and risk-managed investment
Innovation	Capability development and technical viability	Early identification of frontier innovation
Market access	Scalability through established distribution channels	Entry into new or jurisdiction-specific markets
Learning	Capability upgrading and skill acquisition	Organizational learning and adaptation
Reputation and legitimacy	Legitimacy signaling and credibility	Ecosystem positioning and regulatory goodwill

The incentives for these firms result in distinct legal frameworks seeking to combine them, which could be described as hybrid agreements.

C. The Overall Legal Architecture of Strategic Partnerships in the Generative AI Market

While the strategic partnership agreements examined vary in their specific terms, consistent patterns emerge across these collaborations between Big Tech and startups in the Generative AI field.[251]

First, Big Tech firms often hold equity participation in their startup partners. The size of investments varies consistently.[252] In none of these cases examined, however, does the stake confer control or allow the Big Tech partner to exercise decisive influence unilaterally.[253]

Second, Big Tech economic and strategic interests are often structured through legal arrangements that extend beyond equity participation.[254] These arrangements may include profit-sharing provisions, agreements regarding IP licensing, board representation, and commitments requiring startups to use their Big Tech partners' platforms exclusively to develop their products.[255] Big Tech firms may also provide access to complementary assets critical to the startups' operation and innovation.[256] In the case of Mistral, Microsoft provided its Azure supercomputing structure and access to the Microsoft platform, through which the different Mistral large language models could be commercialized on a global basis.[257] In the case of OpenAI, Microsoft became its largest cloud provider and similarly made its Azure platform available for the commercialization and development of tools.[258]

Third, there is a close collaboration between the companies, interlocking their interests for mutual success.[259] Common research teams working directly together and informal relationships

251. *See* FED. TRADE COMM'N, *supra* note 65, at 16–29 (describing, in anonymized form, the recurring categories of contractual provisions encountered across the partnerships between cloud service providers and AI developers).

252. *See* the description of the strategic partnerships between Microsoft and OpenAI, Bradshaw, *supra* note 173; between Microsoft and Mistral, David, *supra* note 190; and between Anthropic and Amazon, Nguyen, *supra* note 218.

253. As demonstrated by the strategic partnerships examined in Part III.A.1–3.

254. *Id.*

255. *Id.*

256. *Id.*

257. *See supra* Part III.A.2.

258. *See supra* Part III.A.1.

259. *See supra* Part III.A.1–3.

established through longstanding partnerships both benefit from mutual learning.[260]

Finally, preserving some level of independence remains valuable for both parties: for large technology companies like Microsoft, it gives them the opportunity to engage with competing startups in the field, allowing it to observe which is more likely to develop disruptive innovation and, thus, to hedge risks.[261] The startups likewise retain some freedom to pursue other relationships: OpenAI maintains research collaborations with multiple entities,[262] while Mistral is not subject to exclusivity commitments to Microsoft, even for cloud services.[263]

While these are complex agreements, the asymmetry in the nature and magnitude of the benefits obtained by each party suggests that collaborative agreements could reinforce structural dependencies and amplify the influence of Big Tech over key complementary assets. These features necessitate a regulatory and contractual response that does not seek to discourage collaboration, but rather aims to mitigate dominance-related risks and limit opportunistic behavior.

The following Part examines policies and legal remedies designed to broaden access to critical complementary assets.

IV. Disseminating the Complementary Assets Required to Innovate in the Generative AI Market

Regardless of the specifics of the collaborations between Big Tech and startups, the resulting Generative AI market features strong and increasing concentration.[264] First, it is unlikely that new entrants will have (sufficient) access to all the required complementary assets needed to innovate and scale-up (such as data, computational power, foundation models, top talent, distribution channels) without

260. *Id.*

261. *See supra* Part III.B.2.d.

262. *See supra* Part III.A.1.

263. *See supra* Part III.A.2.

264. *See* Widder & Kim, *supra* note 34; Azoulay, Krieger & Nagaraj, *supra* note 17; *see generally* Gupta, Urmetzer & Ansari, *supra* note 2 (surveying different partnerships between Big Tech and startups).

partnering with Big Tech at some point.[265] Second, even if new entrants in the market can generate innovation, it is likely that this innovation will be confined to the application layer of the market.[266] The other layers (involving data, computing power, and the creation of foundational models) are—and will become increasingly more—difficult for startups to enter given the costs and lack of infrastructure to start participating in productive activities in such realms. Third, even though the current configuration of the market includes a number of startups, it is possible that these early entrants in the market may constitute the few entrants able to consolidate their position in the field, with hardly any other startups being able to achieve the same position due to the access barriers.[267]

Such a scenario of strong concentration has been recognized by studies in the field.[268] Approaches to this problem often focus on whether competition law can be employed to prevent deals that establish a dominating position of these companies in the Generative AI domain or examine the potential of open access to AI technologies as a strategy to counteract this dominance.[269]

While this Article claims that these approaches are important, it considers that, in isolation, they are insufficient to deal with this problem. It claims that strategies should be expanded to contemplate how to widen access to the complementary assets required to innovate, increasing the chances for new entrants to participate in the Generative AI market. *Ex ante* antimonopoly governance tools are essential to redress any harm that antitrust law is unlikely to solve.[270]

This Part develops the first component of the article's framework by examining how access to the complementary assets required for Generative AI innovation can be disseminated in ways that mitigate the structural dependence of new entrants on large technology companies. Section A begins by explaining why traditional competition law tools are ill-suited to address this problem, pointing

265. *See* Azoulay, Krieger & Nagaraj, *supra* note 17, at 37.
266. *Id.* at 39.
267. *See* Warren & Wyden, *supra* note 18.
268. Azoulay, Krieger & Nagaraj, *supra* note 17, at 2.
269. Bostoen, Santos & Veer, *supra* note 67, at 85–87.
270. Narechania & Sitaraman, *supra* note 43, at 146.

out that collaborations between incumbents and startups are still mostly regarded as formally lawful and efficiency-enhancing. The limited reach of antitrust in this context reflects not regulatory inaction, but a structural mismatch between antitrust tools and forms of power exercised through conditional access to infrastructure and scale.

Building on this diagnosis, Section B then examines two sets of interventions aimed at expanding innovation opportunities upstream of contractual governance. Initially, it considers regulatory approaches that treat elements of the AI stack as functionally analogous to public utilities, and rely on different obligations to reduce dependence. Then, Section C explores governmental initiatives and institutional arrangements seeking to develop forms of Public AI, through which selected components of the AI stack may be made available to new entrants at cost or free of charge, extending beyond the open-source movement toward infrastructure-level access.

A. The Limits of Antitrust-Centered Approaches

In their Joint Statement on Competition in Generative AI Foundation Models and AI Products, the U.S. Federal Trade Commission, the U.S. Department of Justice, the European Commission, and the U.K. Competition and Markets Authority voiced a shared concern regarding the competitive risks associated with the rapid development of Generative AI.[271] While acknowledging the significant social and economic benefits of these technologies, the agencies identified three interrelated risks. First, a small number of firms may retain control over key inputs required to innovate; second, incumbent firms may secure lasting advantages by controlling essential distribution channels and deployment infrastructures; and third, strategic partnerships among dominant firms may reinforce these patterns.[272]

These concerns have prompted increased scrutiny of collaborations and investments involving large technology companies and emergent firms in the Generative AI field, including investigations conducted under merger-control and related

271. *See* Vestager et al., *supra* note 24, at 2–3.

272. *Id.*

competition-law frameworks.[273] At present, however, it remains uncertain and even unlikely that such arrangements will ultimately be found to violate existing competition-law rules, for two main reasons.[274]

First, most AI strategic partnerships are unlikely to qualify as mergers under the antitrust laws of U.S., U.K., or the European Union as there is no sufficient evidence indicating control by the largest companies over the entrants.[275] Second, those deals often "fail to reach the revenue thresholds that trigger merger control"[276] Experts examined a series of reports published by competition authorities of the U.S., U.K., and EU to review the competitive aspects of AI strategic partnerships, noting a similar trend across all of them.[277] While there is theoretical concern about potential anticompetitive effects of these deals, all of the reports so far have refrained from stating that there was an actual violation of antitrust rules that should be further pursued. Importantly, most deals involved the acquisition of minority stakes by Big Tech in the startups and lack exclusivity rights.[278] Beyond that, it has been claimed that AI strategic partnerships boosted competition by providing entrants with key resources required to scale up in the market.[279]

More fundamentally, the challenges posed by Generative AI collaborations expose a structural limitation of competition law as a tool for governing innovation in this domain. Even where competition authorities play a crucial role in monitoring anticompetitive conduct, antitrust intervention alone cannot resolve broader questions concerning the dissemination of innovative capabilities.[280]

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273. Auer & Zúñiga, *supra* note 17, at 6–8.

274. *Id.* at 6, 8–18.

275. *Id.*

276. *Id.* at 6.

277. *Id.* at 8–18.

278. *Id.* at 12, 15.

279. *Id.* at 18.

280. *See* Narechania & Sitaraman, *supra* note 43, at 106–07 (arguing that antitrust's traditional tools are insufficient to govern the concentrated infrastructure underlying AI development, and proposing antimonopoly instruments); Khan, *supra* note 31, at 717 (critiquing the price-based orientation of modern

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In the United States ("U.S."), these limitations reflect the structure of antitrust doctrine itself, which remains largely focused on price effects and exclusionary conduct.[281] Such approach renders antitrust inadequate to address forms of infrastructural concentration that limit innovation by controlling access to complementary assets rather than foreclosing competition outright.[282]

This structural mismatch can be traced, in the U.S., to the architecture of the doctrine itself.[283] Section 7 of the Clayton Act prohibits acquisitions whose effect "may be substantially to lessen competition"[284] and, in principle, reaches even partial and minority stock acquisitions.[285] The exemption for acquisitions made "solely for investment, together with the transaction-size thresholds of the Hart-Scott-Rodino premerger notification regime, leaves ample room for arrangements structured through minority, non-voting, and contingent stakes to escape mandatory review.[286] The strategic partnerships examined in Part II exemplify this pattern: substantial financial commitments that stop short of control, coupled with contractual rights over infrastructure, licensing, and distribution which the merger-control framework was not designed to capture. The point is illustrated, in its limiting case, by the recent wave of so-called acqui-hire arrangements—such as Microsoft's absorption of Inflection AI's leadership, talent, and technology through hiring and licensing

antitrust doctrine and its limited capacity to address structural concentration).

281. Khan, *supra* note 31, at 717.

282. *Id.* at 717–36 (tracing and critiquing the price-based approach of modern antitrust law); Hovenkamp, *supra* note 31 at 1958 (discussing how platforms exert power over complementary assets and platform ecosystems and the limitations of antitrust in dealing with this issue).

283. Khan, *supra* note 31, at 717–36.

284. Clayton Act § 7, 15 U.S.C. § 18 (2024); *see* United States v. E.I. du Pont de Nemours & Co., 353 U.S. 586, 588, 591, 607 (1957) (holding that a minority stockholding of approximately 23% could violate Section 7 of the Clayton Act).

285. 15 U.S.C. § 18; *see E.I. du Pont de Nemours & Co.*, 353 U.S. at 588, 591, 607.

286. 15 U.S.C. § 18a (2024); 16 C.F.R. § 802.9 (2025) (exempting acquisitions made "solely for the purpose of investment" of ten percent or less of the outstanding voting securities of the issuer); *see also* U.S. Dep't Just. & Fed. Trade Comm'n, Merger Guidelines 3, 28–29 (2023) (addressing acquisitions of partial ownership and minority interests).

rather than acquisition. Such arrangements have generally fallen outside traditional merger analysis or have been found not to constitute reviewable concentrations under existing merger-control rules.[287]

Nor does monopolization doctrine offer a more promising avenue. Under *Verizon Communications Inc. v. Trinko*, firms—even monopolists—are under no general antitrust duty to deal with their rivals.[288] Moreover, the Supreme Court has expressly declined to endorse the essential facilities doctrine, emphasizing both that compelled sharing may diminish the incentives to invest in infrastructure, and that courts are ill suited to act as "central planners" determining the price, quantity, and terms of forced access.[289] The narrow exception recognized in *Aspen Skiing* concerning the termination of a prior voluntary and profitable course of dealing has been characterized by the Court as lying "at or near the outer boundary" of liability under Section 2 of the Sherman Act.[290] The consequence, for present purposes, is that the very form of power documented in this Article—conditional access to compute, cloud infrastructure and distribution channels—lies largely beyond the reach of antitrust compulsion. Startups denied access to such assets, or

287. Griffith & Metz, *supra* note 134 (describing the licensing and hiring structures adopted by Microsoft, Amazon and Google in relation to Inflection AI, Adept and Character.AI); *See Microsoft Corporation's Hiring of Certain Former Employees of Inflection and its Entry Into Associated Arrangements With Inflection*, COMPETITION & MKTS. AUTH. ¶ 1 (Sept. 4, 2024). https://assets.publishing.service.gov.uk/media/6719ff5f549f63039436b3c8/__Full_text_decision__.pdf [https://perma.cc/58WJ-KEN7] (finding that the arrangements constituted a relevant merger situation but clearing them at Phase 1 for absence of a realistic prospect of a substantial lessening of competition).

288. *See* Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 407–11 (2004) (noting that compelled sharing may lessen the incentives to invest in economically beneficial facilities, that "[w]e have never recognized" the essential facilities doctrine, and that enforced sharing would require antitrust courts to act as "central planners, identifying the proper price, quantity, and other terms of dealing – a role for which they are ill suited").

289. *Id.* at 407–08.

290. Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585 (1985); *Trinko*, 540 U.S. at 409 (characterizing *Aspen Skiing* as "at or near the outer boundary of § 2 liability").

cut off in the course of an ongoing collaboration, would face formidable doctrinal obstacles obtaining an antitrust remedy.[291] Notably, the institutional incapacity of courts to administer access terms under conditions of technical complexity (which underlies this doctrinal restraint) parallels the limits of " adjudication of innovation agreements examined in Part IV.

B. Regulatory Tools to Address Concentration and Dependency

Using regulatory antimonopoly tools in industries displaying strong market concentration and network effects has been discussed in the U.S., particularly through the law of networks, platforms, and utilities ("NPU").[292] This perspective proposes an ex ante approach intended to design a market with greater downstream competition, avoiding monopoly or oligopolies and ensuring the continuity of essential services.[293] Some of the proposed tools would be pertinent to minimize concentration in the Generative AI Market.

The first regulatory tool that could be employed is structural separation: Either certain lines of business cannot be fully vertically integrated into a single firm but must be separated into different independent entities; or they simply cannot operate simultaneously in adjacent markets.[294] While structural separations regimes have historically been applied in different domains,[295] their potential has been examined recently in the context of dominant digital platforms vertically integrating different business lines.[296] In the field of AI—where there is often a consolidation of several layers of the AI supply chain in the hands of a single large technology company—this

291. *See* Erik Hovenkamp, *The Antitrust Duty to Deal in the Age of Big Tech*, 131 YALE L.J. 1483, 1488 (2022) (mapping the narrow scope of refusal-to-deal liability after *Trinko*). *See generally Nikolas* Guggenberger, *Essential Platforms*, 24 STAN. TECH. L. REV. 237 (2021) (advocating a revival of the essential facilities doctrine in relation to digital platforms).

292. MORGAN RICKS ET AL., MENAND, NETWORKS, PLATFORMS, AND UTILITIES: LAW AND POLICY (2022).

293. Narechania & Sitaraman, *supra* note 43, at 158–59.

294. *Id.* at 159–160; *See also* Widder & Kim, *supra* note 34, at 5.

295. Such as railroads, banking, television networks, telecommunications, see Lina M. Khan, *The Separation of Platforms and Commerce*, 119 COLUM. L. REV. 973, 1037 (2019).

296. *Id.* at 983.

approach would impose legal separation of these different services across different firms, making it more difficult for companies to adopt self-preferencing or use their influence in one layer of the stack to press their advantage into another. For instance, cloud companies would have cloud treated as a basic utility, such as water or electricity, to be offered for all kinds of purposes without being able to privilege their own downstream business lines or leverage their position into another layer.

The second regulatory tool is non-discrimination and equal access rules: Even though vertical integration may be possible in a particular business, the same access (and potentially a similar price) should be offered to downstream providers seeking access to a particular service or product.[297] In the context of the AI supply chain, that could entail that the provision of hardware (such as chips) or cloud computing could be subject to non-discrimination rules. The obstacle to implementing this approach, however, would be the costs of monitoring and enforcing non-discrimination and equal access, whereas structural separation could be more easily implemented.[298]

The third regulatory tool to undermine market concentration *ex ante* would be interoperability rules.[299] In essence, interoperability allows "reliable and timely transfer of useful operational data among the participating entities" and can represent a competition remedy without causing much interference.[300] By enabling the sharing of investments and requirements across market participants, interoperability facilitates the entry of new competitors in the market. This sharing facilitates for users the process of changing providers and platforms across different services while retaining functionality. In the context of the AI stack, interoperability would apply across different layers. For instance, interoperability could mandate rules to facilitate transition from one cloud provider to another, or mandate data sharing through a technical approach called federated learning.[301]

297. Narechania & Sitaraman, *supra* note 43, at 160–62.

298. *Id.* at 161.

299. *Id.* at 162; Vestager et al., *supra* note 24, at 2.

300. Herbert Hovenkamp, *Antitrust Interoperability Remedies*, 123 COLUM. L. REV. FORUM 1, 3 (2023).

301. Narechania & Sitaraman, *supra* note 43, at 162.

These NPU approaches could contribute *ex ante* to generate a more diverse Generative AI ecosystem by facilitating the participation of new market entrants.

C. Disseminating Innovation Capacity

The possibility to extend innovation capabilities to startups in and beyond the application layer depends on having access to different complementary assets or infrastructural capabilities required to produce Generative AI models. Policy proposals involving such developments often reference extending the openness of AI models and their correlated resources; but they could be further extended to create a public option for different elements in the AI technological stack providing access to such systems more broadly.

1. Open Access to Foundational Models and Complementary Assets

The release of open-source software—whose source code is transparent, freely accessible and modifiable—has become increasingly common among a variety of entities, including private companies.[302] Companies make such software freely available not only for philanthropic reasons, but because business models combining open and commercial systems bring economic advantages.[303] By engaging users that modify, improve, engage, and disseminate open software, the companies that produced the software may benefit from having users' engagement with a proprietary platform in which such software runs. Their engagement may result in improvements in the operational system. The technological improvements can extend to other products and services produced and commercially distributed, expand the user base of the underlying paying platform, and generate other types of financial benefits. This business model has contributed to the dissemination of open software.

Similarly, the idea of open AI models that could become widely available to the public are being discussed.[304] This possibility, however, poses some additional challenges compared to open software. The

302. Benkler, *supra* note 137, at 371–72.
303. *Id.* at 444–46.
304. Widder, West & Whittaker, *supra* note 67.

concept of open AI is much more elusive and difficult to define than that of open software.

On the one hand, it is unclear what the concept means: How much transparency, openness regarding access to the system, modifiability, and reuse is necessary to classify a particular system as open? On the other hand, it is necessary to understand that the level of openness should be examined in relation to different layers of the stack in a GenAI system. For instance, its compute, training data, and foundation models. Clarification is needed in relation to which of these layers' openness is required and to what extent.

Such uncertainty has led authors to refer to a concept of gradients of openness instead of a dichotomy between open and closed AI systems.[305] In the case of the company OpenAI, openness has been claimed to be a marketing strategy instead of a reality, since it "does not include open governance, democratic or collaborative contributions, open data, or openly available access to the costly resources required to create large scale AI models."[306]

The use of open access to different elements in the distinct layers of the stack of the Generative AI systems could indeed represent an avenue to provide startups greater access to the infrastructure required to innovate. At this point, such openness is greatly limited, subject to the directives established by private companies and the existence of business models suitable to their purposes. Additionally, it remains conceptually unclear.

2. Toward an AI Public Option

Regardless of the contours of open access to AI technologies in the Generative AI stack, it remains a privately designed system made available to the public such that the degree of transparency, reusability, and extensibility is defined also by the company providing it.

The limitations of such systems led to discussions around the creation of a form of "public AI" in policy, governmental, and legal

305. Solaiman, *supra* note 78, at 111.

306. Widder, West & Whittaker, *supra* note 67, at 14–15.

circles.[307] Public AI, and particularly the modality of a "Public AI Option," would not necessarily have the potential to compete in terms of capabilities with Big Tech. However, it could give different companies in the market the free or at-cost access to the complementary resources needed to compete in the market and to ensure that fundamental values are not in the hands of a few Big Tech companies that can control the capabilities of AI systems.[308]

Public AI can translate into four main dimensions.[309] First, outsourcing, where the government outsources to private companies the development of public AI; second, networked collaboration, where the government backs connections between public universities, research institutions and non-profit organizations to create public AI; third, state-corporation fusion, where AI develops through state-owned enterprises and government investments in the private sector; and fourth, public option models that "compete with offerings from an independent private sector."[310] Not all of these forms of public AI would minimize the dominance of large technology companies in the

307. Bruce Schneier & Nathan E. Sanders, *Build AI by the People, for the People*, FOREIGN POL'Y (June 12, 2023), https://foreignpolicy.com/2023/06/12/ai-regulation-technology-us-china-eu-governance/ [https://perma.cc/QD3A-X25E]; *Public AI: Infrastructure for the Common Good*, PUBLIC AI NETWORK Aug. 2024, at 1, https://publicai.network/whitepaper [https://perma.cc/39XS-R5TX]; *Should the Public Sector Build Its Own AI?*, FIN. TIMES (Sept. 9, 2025), https://www.ft.com/content/686252f6-6d3d-40ec-bb2b-132d4fafb198 [https://perma.cc/5XKA-ZB6X]; Ganesh Sitaraman & Karun Parek, *The Global Rise of Public AI*, VAND. POL'Y ACCELERATOR, May 2025, at 4, https://cdn.vanderbilt.edu/vu-URL/wp-content/uploads/sites/412/2025/05/05220054/The-Global-Rise-of-Public-AI.pdf [https://perma.cc/897V-3GTX].; *Public AI Infrastructure: What Is It, Do We Need It and Will It Ever Be Built? A Media Leader Explains*, WORLD ECON. F. (Feb. 11, 2025), https://www.weforum.org/stories/2025/02/public-ai-infrastructure-a-media-leader-explains/ [https://perma.cc/GT5J-8JSN].

308. Schneier & Sanders, *supra* note 307.

309. Sitaraman & Parek, *supra* note 307, at 8.

310. *Id.* at 12.

field.[311] Networked collaboration and public options, however, could potentially lead to a more diverse AI ecosystem, if properly designed.[312]

Public AI options, operating at one or more layers of the AI stack,[313] could help level the playing field even if governments are unlikely to fund an entirely public AI supply chain. Three crucial features characterize public AI options.[314] They provide full public access—free or at cost to willing actors—and extend beyond the application layer and the limitations of the so-called "open AI" trend. They are subject to public accountability, allowing users and citizens to exercise a significant amount of influence through different procedures over the development of the technology. Finally, they represent permanent public goods which cannot be captured by private firms after the initial effort and investment of the public sector.

Foremost among the limitations of Public AI are the significant costs involved in developing AI infrastructure.[315] Due to these significant costs for the public sector, several of the existing projects to develop public options focus on particular layers of the AI supply chain that are considered essential and most feasible for public development from a financial perspective, such as public datasets, cloud provision, foundational AI models, or shared supercomputing

311. *Id.* at 14 ("Outsourced Provisioning, for example, may strengthen the position of already dominant tech companies. The US's NAIRR initiative has been criticized, for example, for potentially reinforcing the market dominance of major cloud providers.").

312. *Id.*

313. Narechania & Sitaraman, *supra* note 43, at 108.

314. PUBLIC AI NETWORK, *supra* note 307, at 6.

315. *See* STANFORD HUMAN-CENTERED AI, THE 2025 AI INDEX REPORT 66–67 (2026), https://hai.stanford.edu/ai-index/2025-ai-index-report [https://perma.cc/6VNZ-58QV] (providing an estimate of inference and training costs for AI models).

capacities. Projects in the U.S.,[316] the U.K.,[317] the EU,[318] and across several other jurisdictions[319] are currently planning or experimenting in developing such projects. The possibility of creating international projects to develop Public AI, combining the public and private sectors of countries that can be considered "middle powers" in terms of AI development, is also proposed as a feasible alternative to overcome cost constraints.[320]

The emerging policy initiatives already illustrate how Public AI options can be selectively developed across different layers of the AI stack. For example, in the U.S., the National Artificial Intelligence Research Resource ("NAIRR") pilot seeks to provide researchers and smaller actors with access to compute, datasets, and model resources through a publicly coordinated framework, even if much of the infrastructure is currently sourced from private providers.[321] In Europe, initiatives such as OpenEuroLLM[322] and broader discussions around "CERN for AI"[323] reflect efforts to develop publicly supported foundation models and shared compute capacities aimed at reducing

316. *New International Consortium Formed to Create Trustworthy and Reliable Generative AI Models for Science*, ARGONNE NAT'L LAB'Y (Nov. 10, 2023), https://www.anl.gov/article/new-international-consortium-formed-to-create-trustworthy-and-reliable-generative-ai-models-for [https://perma.cc/29JR-GMP6].

317. *See generally* Haydn Belfield, *Great British Cloud and BritGPT: The UK's AI Industrial Strategy Must Play to Our Strengths*, LABOR FOR THE LONG TERM (May 20, 2023), https://policycommons.net/artifacts/3830325/untitled/4636241/ [https://perma.cc/NCU2-JTSV] (proposing publicly owned companies to develop AI infrastructure and models).

318. *European Commission approves major European cloud project*, PRESSE - MINISTÈRE DES FINANCES (Dec. 5, 2023), https://presse.economie.gouv.fr/european-commission-approves-major-european-cloud-project/ [https://perma.cc/NUA5-MPJ3].

319. Sitaraman & Parek, *supra* note 307, at 15.

320. Joshua Tan et al., *Airbus for AI: A Global Strategy for Public Value Creation*, BENNET SCH. PUB. POL'Y CAMBRIDGE, SEPT 2025, at 1, https://publicai.co/airbus-for-ai.pdf [https://perma.cc/U5AH-PA4S].

321. Sitaraman & Parek, *supra* note 307, at 8–9.

322. *Open LLMs for Transparent AI in Europe*, CSC (Mar. 3, 2025), https://csc.fi/en/ media-release/open-llms-for-transparent-ai-in-europe/ [https://perma.cc/J7TZ-K7AF].

323. Alex Petropoulos et al., *Building CERN for AI - An Institutional Blueprint - Centre for Future Generations*, CTR. FUTURE GENERATIONS (Jan. 30, 2025), https://cfg.eu/building-cern-for-ai/ [https://perma.cc/9J44-QCES].

dependence on foreign and private actors. Similarly, Japan's AI Bridging Cloud Infrastructure ("ABCI")[324] represents a publicly operated compute platform open to academic and commercial users. Taken together, these examples illustrate that Public AI options are not conceived as fully integrated alternatives to private AI ecosystems but rather as strategic public interventions at critical bottlenecks—compute, data, and models—where public provision can expand access, foster competition, and embed public accountability.

While the dissemination of access to complementary assets through regulatory and public-infrastructure tools can mitigate structural dependence and expand innovation opportunities, it cannot eliminate the need for collaboration between startups and large technology companies in the Generative AI field. Under conditions of radical uncertainty, such collaborations remain central to learning, experimenting, and scaling. Yet existing legal frameworks offer little guidance as to how these relationships should be structured to sustain cooperation while constraining opportunism. This residual governance challenge is the focus of Part V.

V. Partnering with Big Tech: Residual Innovation Governance Under Uncertainty

This part develops the second component of the Article's proposed scheme: a framework of residual innovation governance for collaborations that remains necessary even where access to complementary assets is partially disseminated. The preceding sections have shown that the Generative AI market is characterized by strong concentration in access to the complementary assets required to innovate, and that the expansion of open or public AI options could contribute to mitigating startups' dependence on large technology firms. Nevertheless, even under regulatory reforms designed to broaden access to infrastructure and reduce structural dominance, collaborations between startups and Big Tech firms are still likely to persist—particularly where innovation depends not only on access to resources but also on learning opportunities, tacit knowledge,

324. Sitaraman & Parek, *supra* note 307, at 21–22.

reputational signaling, and joint experimentation at the technological frontier.[325]

This persistence of collaboration gives rise to what may be described as a problem of residual innovation governance. Even after structural and regulatory interventions seek to mitigate dependency and dominance, a residual domain remains in which innovation is produced through voluntary collaborations between potentially asymmetrically positioned actors. In this domain, the law does not primarily operate by prohibiting collaboration or mandating market access but by shaping the background governance conditions under which collaboration takes place.

In this context, discouraging partnerships between Big Tech firms and startups would risk undermining innovation rather than promoting it. At the same time, these collaborations raise distinct governance concerns. They are concluded under conditions of profound uncertainty, asymmetric bargaining power, and differential control over complementary assets. Absent adequate governance mechanisms, such conditions create a heightened risk of opportunistic behavior and an uneven appropriation of the gains from collaboration, particularly to the detriment of startups whose principal asset may consist of the knowledge generated through the partnership itself.

This section therefore focuses on the governance of collaboration rather than its prohibition. It examines how contractual design can function as a form of residual innovation governance, mitigating opportunism and preserving the innovative potential of startup–Big Tech partnerships even where structural asymmetries cannot be fully eliminated. Section A analyzes the governance mechanisms through which the parties themselves are likely to govern innovation agreements under conditions of radical uncertainty, distilling from them a set of design principles that serve both as best practices for constraining opportunism and as a benchmark for the assessment of potential abuse. Section B then considers the role of regulatory frameworks in supporting such governance arrangements when startups operate in vulnerable and asymmetric bargaining positions.

325. See *supra* Part III.B (exploring the different incentives for startups to conclude collaborations with Big Tech in the Generative AI field).

A. Governance Instruments to Undermine Opportunism in Innovation Agreements

Substantial literature addresses the issue of contracting for innovation.[326] The distinctive challenge in this context lies in the inherent uncertainty involved in the process of innovation, preventing the parties from clearly establishing ex ante the parties' obligations under the contract. Instead, these agreements structure a procedure to specify uncertainty continuously as the parties move ahead in a joint search process whose trajectory, feasibility, and outcomes cannot be specified ex ante in the agreement.

In this sense, innovation in the field of Generative AI is marked not merely by risk—which can be probabilistically quantified—but by uncertainty.[327] At the outset of the collaboration, the parties often cannot fully identify the relevant space of future developments,[328] define probability distributions over outcomes, or specify in advance what constitutes success or failure.[329] It may be unclear whether a given

326. *See* Gilson, Sabel & Scott, *supra* note 32; Jennejohn, *supra* note 32; *see generally* Gillian K. Hadfield & Iva Bozovic, *Scaffolding: Using Formal Contracts to Support Informal Relations in Support of Innovation*, 5 WIS. L. REV. 981 (2016) (conducting empirical research that distinguishes contracting models in innovative versus non-innovative contexts); Bernstein, *supra* note 32; PABLO MARCELLO BAQUERO, *supra* note 25.

327. *See* FRANK H. KNIGHT, RISK, UNCERTAINTY AND PROFIT, 19–20 (2021) (distinguishing between risk and uncertainty).

328. Jason Wei et al., *Emergent Abilities of Large Language Models*, TRANSACTIONS ON MACH. LEARNING RSCH., Aug. 2022, at 1, https://openreview.net/pdf?id=yzkSU5zdwD [https://perma.cc/RUZ2-BTPK] ("This paper instead discusses an unpredictable phenomenon that we refer to as emergent abilities of large language models. We consider an ability to be emergent if it is not present in smaller models but is present in larger models. Thus, emergent abilities cannot be predicted simply by extrapolating the performance of smaller models.").

329. Rishi Bommasani et al., *On Opportunities & Risks Found. Models*, CTR. FOR RSCH. ON FOUNDATIONAL MODELS (CRFM), at 1 (2021) https://crfm.stanford.edu/assets/report.pdf [https://perma.cc/J2CB-VAXK] (last visited Jan. 29, 2026) ("Despite the impending widespread deployment of foundation models, we currently lack a clear understanding of how they work, when they fail, and what they are even capable of due to their emergent properties.").

research trajectory will yield technically optimal models,[330] whether performance gains will plateau,[331] or whether downstream deployment will be commercially or legally feasible at all.[332] In such an environment, uncertainty implicates not only outcomes but the very criteria by which outcomes should be evaluated.

This form of uncertainty gives rise to contractual incompleteness.[333] While the specific agreements governing strategic partnerships in the Generative AI domain are non-public and may contain internal milestones or performance benchmarks,[334] available evidence does not indicate that these collaborations are governed primarily through enforceable specifications of technological outputs, performance thresholds, or commercial success

330. For a discussion of how, early on, the trajectory of technology development for large language models involves uncertainty regarding the optimal number of resources and specific design required to attain certain outcomes, see Jordan Hoffmann et al., *Training Compute-Optimal Large Language Models*, DEEP MIND, at 15–16 (claiming that the engineering approach of focusing on increasing model size while maintaining the size of training data had led to underperforming models).

331. Zhengyu Chen et al., *Revisiting Scaling Laws for Language Models: The Role of Data Quality and Training Strategies*, ACL ANTHOLOGY, at 23881, https://aclanthology.org/2025.acl-long.1163/ [https://perma.cc/Z2XY-45B4] (examining the phenomenon of "subscaling", where despite more compute and data, performance improvements for language models have decelerated).

332. Percy Liang et al., *Holistic Evaluation of Language Models*, TRANSACTIONS ON MACH. LEARNING RSCH. Aug. 2023, at 1, https://openreview.net/pdf?id=iO4LZibEqW [https://perma.cc/945A-WQLX] ("Language models [LMs] are becoming the foundation for almost all major language technologies, but their capabilities, limitations, and risks are not well understood."); Sandra Wachter, Brent Mittelstadt & Chris Russell, *Do Large Language Models Have a Legal Duty to Tell the Truth?*, 11 ROYAL SOC'Y OPEN SCI. 1, 1–2 (2024).

333. KNIGHT, *supra* note 327, at 19–20 (distinguishing risk and uncertainty); Oliver Hart & John Moore, *Incomplete Contracts and Renegotiation*, 56 ECONOMETRICA 755, 755 (1988) (examining how incomplete agreements arise when parties are unable to specify future contingencies).

334. The analysis here does not presuppose the absence of internal milestones or benchmarks in individual agreements. Rather, it focuses on the observable governance function of contractual arrangements, as reflected in regulatory reporting and publicly available evidence, and on the mechanisms through which collaboration is structured and adjusted over time.

criteria. Instead, as reflected in regulatory reporting and in the contractual architectures observable across the OpenAI–Microsoft, Anthropic–Amazon, and Mistral–Microsoft partnerships, governance is organized around conditional access to complementary assets, staged and revisable commitments, and the allocation of broad discretion over continuation, scaling, and deployment.

This contractual logic is visible across the principal partnerships examined in this Article. In the OpenAI–Microsoft relationship, collaboration evolved through a series of successive agreements, with commitments regarding cloud infrastructure, financial investment, and intellectual property repeatedly expanded and revised over time. Access to Microsoft's Azure supercomputing resources—an indispensable input for large-scale model training—was granted conditionally and adjusted as the collaboration deepened, while decisions regarding integration of OpenAI's models into Microsoft's products remained subject to ongoing assessment rather than fixed contractual benchmarks.[335]

A similar structure characterizes the Anthropic-Amazon partnership, as evidenced by substantial financial investments deployed in stages, Anthropic's designation of AWS as its primary cloud and training partner, and the deployment of its models through Amazon Bedrock. Here again, the agreements organize collaboration around access to infrastructure and distribution channels while leaving open whether, how, and to what extent particular research trajectories will ultimately be scaled or commercialized.[336]

The Microsoft-Mistral partnership, despite involving a comparatively small equity stake, likewise centers on access to supercomputing infrastructure and global distribution via Microsoft's

335. *See supra* Part III.A.1 (OpenAI–Microsoft); *see also* FED. TRADE COMM'N, *supra* note 65, at 4, 16, 20 (describing cloud-based partnerships involving staged investment, evolving access to compute, and integration into distribution platforms).

336. *See supra* Part III.A.3 (Anthropic–Amazon); *see also* FED. TRADE COMM'N, *supra* note 65, at 4, 5, 16 (documenting staged financial commitments, designation of primary cloud providers, and deployment through incumbent platforms).

platforms, rather than on commitments to deliver specified technological or commercial outcomes.[337]

Across these cases, continuation, scaling, and deployment decisions are governed less by ex ante performance criteria and more by ongoing evaluative judgment exercised under conditions of uncertainty.[338]

In such cases, contractual incompleteness is not incidental but structural. The central contractual gaps concern precisely those dimensions—effort, learning, intermediate outputs, and evaluative judgment—that matter most for innovation at the technological frontier. Contracts regulate access to compute, infrastructure, intellectual property, and distribution channels. Yet they seem to leave unresolved how progress should be assessed, when a research trajectory should be deemed promising or exhausted, and under what conditions collaboration should deepen, pivot, or terminate. Uncertainty thus extends beyond outcomes to encompass the very criteria by which outcomes are evaluated.

Traditional responses to contractual incompleteness offer limited traction in this setting. Ex post gap-filling by courts or arbitrators is ill-suited to contexts in which adjudicators lack the technical capacity to reconstruct innovation paths or to distinguish opportunistic behavior from genuine technical failure.[339] Relational contracting mechanisms, grounded in reputation or the expectation of repeat interaction, are likewise weakened by acute observability problems.[340] In rapidly evolving Generative AI projects, neither courts nor counterparties—and often not even the parties themselves—can reliably observe effort, assess the quality of intermediate results, or

337. *See supra* Part III.A.2.

338. *See* FED. TRADE COMM'N, *supra* note 65, at 17–18 (reporting on key provisions in AI partnerships, such as consultation rights, advance notice of significant decisions, and board observer arrangements, along with partners' ongoing consideration of extending partnerships through further funding, rather than fixed continuation criteria).

339. Gilson, Sabel & Scott, *supra* note 32, at 1389–92.

340. BAQUERO, *supra* note 25, at 7–8.

determine whether disappointing outcomes reflect strategic behavior or the inherent limits of the technology.[341]

It is against this backdrop that braided contractual arrangements[342] emerge as a distinctive governance response. Rather than attempting to resolve uncertainty through ex ante specification, innovation agreements in the Generative AI domain combine formal contractual commitments with arrangements that, in practice, allow uncertainty to be progressively specified through staged commitments, renegotiation, and discretionary continuation decisions. Staged collaboration structures, contingent financial arrangements, flexible intellectual property allocations, and ongoing joint engagement function not as substitutes for missing specifications, but as mechanisms for managing uncertainty over time. By interweaving formal obligations with informal dependence and mutual exposure, braided agreements do not eliminate incompleteness; they seek instead to govern it.

Such arrangements also can be designed to operate as partial constraints on opportunism. As collaboration progresses and the parties make reciprocal investments of capital, infrastructure, and organizational effort, interdependence increases. Withdrawal or unilateral appropriation becomes more costly, as it risks undermining sunk investments and foreclosing future learning and commercialization opportunities. Braided governance thus sustains cooperation in environments where formal enforcement is limited, not by eliminating uncertainty, but by raising the stakes of opportunistic behavior.

At the same time, under conditions of radical uncertainty and asymmetric access to complementary assets, evaluative discretion remains a central locus of power. Large technology firms typically control the infrastructure required to scale and deploy Generative AI systems, possess superior information regarding the feasibility and commercial value of intermediate developments, and retain practical authority over whether collaboration continues, expands, or

341. *See supra* Part IV (documenting evolving, multi-phase collaborations in which effort, learning, and intermediate outcomes remain difficult to observe or evaluate).

342. Gilson, Sabel & Scott, *supra* note 32, at 1377.

terminates. Braided governance mechanisms therefore play a dual role: they preserve the learning and experimentation essential to innovation while only partially constraining opportunism where discretion over continuation and deployment remains unevenly distributed.

The analysis of the partnerships examined in this Article, read against the broader literature on contracting for innovation, allows the identification of a set of design principles for braided agreements in the Generative AI field.[343] Because these collaborations are already structured through staged, conditional, and revisable commitments,[344] the question is not whether discretion will exist, but how its exercise is to be disciplined. The principles that follow perform a dual function. For the parties, they constitute best practices, indicating the contractual dimensions in which opportunism can be constrained without undermining the flexibility that innovation under radical uncertainty requires. For agencies, courts, and arbitrators, they provide a benchmark against which the exercise of contractual discretion may be assessed, which at the level of contract design, is the counterpart of the evaluative question formulated at the end of this section.

First, agreements should incorporate compute portability and transition assistance provisions. Where access to cloud computing or specialized hardware constitutes the indispensable input of the collaboration, conditional access should be the contractual mitigation of the consequences of its withdrawal: minimum notice periods before access is reduced or discontinued, rights to the egress of data and model weights, and transition pricing for a defined period. Provisions of this kind perform a function analogous to that of the interoperability and switching obligations discussed in Part III, and

343. *See generally* Gilson, Sabel & Scott, *supra* note 32 (discussing the combination of formal governance structures with low-powered enforcement in innovation agreements).

344. FED. TRADE COMM'N, *supra* note 65, at 4, 19–20 (documenting staged investment commitments and provisions channeling investment back into the partner's cloud services).

their diffusion could be encouraged—or rendered mandatory—by regulation.[345]

Second, information rights should be calibrated to the observability problems that undermine relational enforcement. As previously discussed, neither courts nor the parties themselves can often reliably observe effort or assess the quality of intermediate results. Contracts cannot eliminate opacity, but they can partially manufacture observability: reciprocal reporting and audit rights concerning jointly developed capabilities, the escrow of technical documentation, and the involvement of technically qualified third parties in the verification of intermediate outputs. Such instruments reduce the informational asymmetry upon which opportunistic behavior depends and simultaneously generate the record against which the exercise of contractual discretion can subsequently be assessed.[346]

Third, intellectual property arrangements should combine time-limited exclusivity with reversion and field-of-use limitations. Exclusive licenses granted to the incumbent partner, as in the OpenAI–Microsoft partnership,[347] concentrate the gains from collaboration and deepen dependence when they are open-ended. Time-limited exclusivity, the reversion of rights upon termination or upon failure to deploy, and carve-outs preserving the startup's capacity to serve adjacent markets maintain the incentives of the incumbent to invest while preserving the startup's ability to appropriate value from the innovation it contributes to producing.

Fourth, agreements should address the termination phase directly, through what may be described as termination-fairness provisions: post-termination covenants restraining the use of know-how acquired in the course of the collaboration, tail-period revenue sharing for

345. *See* Regulation 2023/2854 of the European Parliament and of the Council of 12 December 2023 on Harmonised Rules on Fair Success to and Use of Data and Amending Regulation (EU) 2017/2394 and Directive (EU) 2020/1828 (Data Act), 2023 O.J. L (2023/2854) arts. 23–31 (establishing obligations to remove obstacles to effective switching between data processing services); *see also supra* Part III.B (discussing the incentives behind the strategic partnerships between Big Tech firms and startups).

346. Hadfield & Bozovic, *supra* note 326, at 995–1000.

347. *See supra* Part III.A.1.

products embodying jointly developed technology, and escalated dispute-resolution clauses referring technical controversies to joint technical and managerial committees before further escalating to arbitration or litigation (as is usual in contracts for innovation). The last element responds directly to the institutional limits, examined above, of ex post judicial gap-filling: Where courts cannot reconstruct innovation paths, party-designed expert procedures may.

The framework developed here can be condensed into an evaluative question: Does the arrangement confer upon one party unilateral and practically unreviewable discretion over the continuation, scaling, or deployment of an asset that its counterparty cannot practicably replace? This question does not operate as a liability standard under existing merger or monopolization doctrine. Part III explained why those frameworks cannot readily reach this form of power. Neither could the question impose upon the parties a particular contractual design, since they are free to design their agreements according to their free will. It could function, instead, at three other levels. It may operate as a screening criterion guiding the investigative and remedial discretion of agencies, indicating which partnerships deserve scrutiny and which commitments (notice periods, portability, transition assistance) remedies should target. It may serve as a designation criterion for the ex ante regulatory obligations discussed in Part III triggering ex ante antimonopoly mechanisms to undermine infrastructural power, instead of resorting to proxies of firm size of the kind employed by existing regimes.[348] And it may guide courts and arbitrators in assessing contractual discretion in innovation agreements, indicating the settings in which good-faith limitations should apply with particular force and in which intermediated governance, examined in the following section, is warranted.

348. *See, e.g.*, Regulation (EU) 2022/1925 of the European Parliament and the Council of 14 September 2022 on Contestable and Fair Markets in the Digital Sector and Amending Directives (EU) 2019/1937 and (EU) 2020/1828 (Digital Markets Act) 2022 O.J. (L 265/1) art. 3 (establishing quantitative thresholds—turnover, capitalization and user numbers—for the designation of gatekeepers).

B. Residual Innovation Governance under Asymmetric Bargaining Power: Intermediated Innovation Governance

The governance mechanisms discussed in the previous section presuppose that the parties to innovation agreements can negotiate contractual safeguards against opportunism. In many instances in the Generative AI market, particularly in the U.S., this assumption will often hold. Leading startups are frequently backed by sophisticated investors,[349] advised by experienced counsel, and capable of exerting meaningful leverage in negotiations with large technology firms. In such contexts, private ordering may suffice to embed governance instruments that partially offset structural asymmetries.

There nevertheless remain important scenarios where this assumption does not apply. Not all startups operate from positions of strength. Bargaining power may be substantially weaker for firms operating outside major innovation hubs, for smaller or later-stage entrants, or for companies whose technological contributions are difficult to assess ex ante. Moreover, even well-funded startups may face acute vulnerability where access to essential complementary assets—such as compute, cloud infrastructure, or distribution platforms—is conditioned on accepting standardized contractual terms offered by a limited number of dominant providers. In these contexts, the effectiveness of contractual governance as a form of residual innovation governance may be undermined by asymmetries that preclude meaningful negotiation.

These limitations point to the potential role of intermediated innovation governance. Rather than prohibiting collaboration or displacing private ordering, intermediated innovation governance refers to institutional arrangements situated between the state and the market that shape the conditions under which collaborative innovation contracts are formed.[350] Their function is not to direct technological development or to substitute for firm-to-firm

349. Abu Bakkar Siddik, Yong Li & Anna Min Du, *Unlocking Funding Success for Generative AI Startups: The Crucial Role of Investor Influence*, 69 FIN. RSCH. LETTERS, at 2 (2024), https://www.sciencedirect.com/science/article/pii/S1544612324012327 [https://perma.cc/GQ6C-3SEM].

350. Pablo Marcello Baquero, *Contracting for Innovation in the Global South: Empirical Evidence from Brazil*, 20 FIU L. REV 1253, 1286–88 (2026).

agreements, but to stabilize collaboration under conditions of radical uncertainty and asymmetric power.

Intermediated innovation governance operates by embedding private contracts within broader institutional environments that distribute risk, constrain opportunism, and reduce bilateral dependency. By mobilizing public resources (financial, infrastructural, or organizational), such arrangements may attenuate the leverage derived from exclusive control over complementary assets without displacing market-based coordination. At the same time, they may serve as coordination devices, facilitating collaboration among multiple actors and reducing reliance on a single dominant counterparty.

A defining feature of intermediated innovation governance is its indirect mode of operation. Rather than imposing substantive outcomes, these arrangements influence innovation through procedural and organizational design. They may introduce phased project structures, shared evaluation criteria, or default approaches to intellectual property allocation, thereby shaping negotiations without dictating their content. In doing so, they reinforce the viability of braided agreements by strengthening the institutional conditions under which formal and informal governance mechanisms can function.

From a legal perspective, the relevance of intermediated innovation governance lies in its capacity to translate public objectives into contractual environments rather than regulatory commands. Law primarily operates here not through prohibition or sanction, but through the design of institutional interfaces that condition incentives and expectations. Duties of cooperation, information sharing, and good-faith engagement arise less as abstract doctrinal requirements and more as embedded features of the institutional setting in which contracts are concluded.

In the context of Generative AI, intermediated innovation governance could take the form of publicly backed research intermediaries, shared access to computing or cloud infrastructure subject to governance conditions, or collaborative programs that bring startups and large firms together under standardized contractual architectures. Such arrangements would not eliminate the need for

private governance instruments, nor would they displace competition law's role in addressing dominance. Rather, they would complement residual innovation governance by enabling startups to engage in collaboration without being forced to accept opportunistic terms as the price of access to essential resources.

Concrete examples of intermediated innovation governance can be found in institutional arrangements that combine standardized contractual models with collective participation to mitigate asymmetric bargaining power. One illustration is provided by publicly supported research intermediaries that structure collaborative R&D through predefined project templates, milestone-based co-funding, and default approaches to intellectual property allocation while leaving substantive technological choices to participating firms. In such programs, collaboration frequently occurs through consortia of small and medium-sized firms rather than bilateral agreements, enabling participants to pool demand for research infrastructure and to negotiate from a collective position. The experience of initiatives such as Empresa Brasileira de Pesquisa e Inovação Industrial (Brazilian Company for Industrial Research and Innovation—"EMBRAPII") in Brazil, which operate through networks of accredited research institutes and standardized contracting frameworks, illustrates how intermediation can reshape bargaining conditions without displacing private ordering.[351]

A comparable institutional logic has been observed outside high-technology sectors, including in global coffee value chains where intermediary organizations have enabled dispersed producers to contract collectively with dominant downstream buyers under standardized contractual arrangements.[352] By aggregating participants and fixing baseline contractual terms, such arrangements reduce bilateral dependence and constrain opportunistic behavior without dictating substantive outcomes. Transposed to the Generative AI domain, analogous forms of intermediated innovation governance—

351. *See* Fabrizio Cafaggi et al., *Accessing the Global Value Chain in a Changing Institutional Environment: Comparing Aeronautics and Coffee* 8–40 (Inter-American Dev. Bank, Working Paper No. IDB-WP-370, 2012), https://www.econstor.eu/handle/10419/115404 [https://perma.cc/4RFB-YSV8].

352. *See id.* at 54–58.

such as shared compute facilities or collaborative programs governed by standardized contractual architectures—could similarly mitigate asymmetries by intermediating access to essential complementary assets while preserving flexibility under uncertainty.

This institutional logic is not entirely foreign to the U.S. SEMATECH, the semiconductor research consortium formed in the late 1980s with federal support, structured pre-competitive collaboration among competing firms, allowing members to conduct joint R&D and share results—and SEMATECH is widely credited with contributing to the recovery of the American semiconductor industry.[353] In-Q-Tel, the strategic investor established to connect national-security agencies with emerging technology startups, similarly operates as an intermediary that reduces information asymmetries and lowers the transaction costs of collaboration between asymmetrically positioned parties.[354] These experiences suggest that intermediated innovation governance is not a departure from, but an extension of, an established American repertoire of institutional support for collaborative innovation—one that could be redeployed at the bottlenecks of the Generative AI supply chain.

C. Objections and Limits

Three objections to the framework advanced in this Article deserve consideration.

The first is the innovation-chilling objection. Echoing concerns voiced in recent European policy debates, it could be argued that regulatory interventions disseminating access to complementary assets and governance requirements attached to collaboration would slow the very innovation they purport to protect, potentially creating further restrictions to entrepreneurial activity.[355] The framework here

353. *See* LARRY D. BROWNING & JUDY C. SHETLER, SEMATECH: SAVING THE U.S. SEMICONDUCTOR INDUSTRY viii (2000); Douglas A. Irwin & Peter J. Klenow, *High-Tech R&D Subsidies: Estimating the Effects of Sematech*, 40 J. INT'L ECON. 323, 323–24 (1996).

354. *See About IQT*, IN-Q-TEL, https://www.iqt.org/about-iqt [https://perma.cc/X7PQ-NEUS] (last visited Sept. 8, 2026).

355. Draghi, *supra* note 28, at 79; *but see generally* Bradford, *supra* note 29 (arguing that regulations do not inhibit innovation, but instead incentivize innovation in intricate ways).

proposed is, however, largely insulated from this concern. It does not essentially prohibit or discourage collaboration; it governs it. The dissemination tools examined in Part III operate by expanding access rather than by restricting conduct, and the governance instruments examined in this Part are largely facilitative, providing parties with contractual architectures they remain free to adapt.

The second objection concerns administrability and public choice. Public AI initiatives involve significant costs, and, depending on how they are designed, risk capture by the very providers they are meant to counterbalance. Criticisms of the NAIRR pilot illustrates this risk: outsourcing its infrastructure may reinforce the position of dominant cloud providers.[356] Moreover, such initiatives require sustained public commitment that shifting political cycles may undermine. These risks are real, and they explain why the framework advanced here does not rest on public provision alone. Most interventions contemplated are targeted at critical bottlenecks rather than at the reconstruction of an entire public AI supply chain, and their accountability features—conditions of public access, permanence as public goods—could be designed to limit capture. Larger interventions are envisioned as results of efforts conducted through larger consortia combining the efforts of different actors across several jurisdictions.

The third objection is that sophisticated parties do not need protective governance. Leading Generative AI startups are backed by sophisticated investors, advised by experienced counsel,[357] and may be expected to negotiate the instruments described in this Part on their own. The objection must be partially conceded. Where bargaining power suffices, private ordering may well embed these safeguards, and nothing in the framework displaces it. The Article, however, indicates potential settings in which the concession does not hold: later entrants, firms operating outside major innovation hubs, and contexts in which access to essential assets is conditioned upon standardized terms offered by a small number of providers. It is in these settings

356. RICKS, SITARAMAN & MENAND, *supra* note 292, at 14 (noting that outsourced provisioning may strengthen the position of already dominant technology companies, and that the NAIRR initiative has been criticized on this ground).

357. *See* Siddik, Li & Du, *supra* note 349, at 2.

that intermediated innovation governance performs its distinctive function through a facilitative role.

Learning-oriented collaborations with large technology firms are likely to remain an integral component of innovation in the Generative AI market. Where they persist, the central legal question shifts from whether they should occur to how they should be governed. Residual innovation governance cannot rely exclusively on bilateral contracting where bargaining asymmetries undermine meaningful negotiation, and intermediated innovation governance complements it by shaping the institutional conditions under which collaboration takes place. The design of these agreements is therefore not a peripheral detail, but a central site of innovation governance.

VI. Conclusion

This Article has examined the role of strategic collaborations between large technology companies and startups in the development of Generative AI, challenging the prevailing tendency to frame such arrangements as either indispensable engines of innovation or as threats to competition that ought to be curtailed. Drawing on an analysis of market structure, contractual practices, and leading partnerships in the field, the Article has argued that this dichotomy is misleading.

The central governance challenge in Generative AI does not lie in collaboration as such, but in the concentration of access to the complementary assets required to innovate and scale. Control over compute, cloud infrastructure, data, and distribution channels structures the conditions under which new entrants can participate in innovation, shaping both the form and direction of technological development. Addressing this challenge therefore requires moving beyond traditional competition-law tools, which are ill-suited to governing power exercised through conditional access and infrastructural dependence.

The Article has advanced a two-part framework in response. First, it has argued that undermining structural dominance in Generative AI requires legal and policy interventions aimed at disseminating innovative capabilities, including regulatory antimonopoly tools and the development of public or publicly supported AI infrastructure.

These interventions can reduce dependency and expand the space for entry and experimentation, but they cannot eliminate the need for collaboration with large technology firms in an environment characterized by radical uncertainty.

Second, the Article has shown that collaboration itself must become a site of governance. Even where access to complementary assets is broadened, innovation in Generative AI will continue to rely on learning-oriented partnerships that generate asymmetric risks of opportunism. In this residual domain, law operates less by prohibiting collaboration than by shaping the contractual and institutional conditions under which it takes place. Through contractual design, braided governance mechanisms, and intermediated innovation frameworks, it is possible to preserve the innovative potential of collaborations between startups and Big Tech while constraining the exercise of infrastructural power.

This analysis clarifies what it means to control the future of Generative AI. Control in this domain is exercised less through ownership, merger, or formal governance rights and more through access to complementary assets and the contractual terms that entrench dependence and establish discretion to condition, scale, and terminate collaboration under uncertainty. The legal governance of innovation therefore operates not only through competition law or corporate structure, but also through the design of the institutional and contractual architectures that shape collaboration itself.

For U.S. legal institutions confronting the governance of Generative AI innovation, the central challenge is not whether competition law should play a role in assessing collaboration between startups and Big Tech firms, but how antitrust enforcement, contract law, and institutional design can jointly operate to preserve experimentation while constraining opportunism in settings characterized by uncertainty and asymmetric power.

These arguments suggest a shift in how law approaches innovation in Generative AI. Rather than oscillating between permissiveness and prohibition, legal governance should focus on designing the architecture of innovation: distributing the capabilities required to innovate while governing collaboration in ways that sustain experimentation, learning, and fair appropriation. In doing so, the law

can help ensure that Generative AI develops not only rapidly, but also under conditions that support pluralism, resilience, and long-term innovation.