IX. The Openness Imperative: Charting a Path for Public AI

by Udbhav Tiwari

In the recent headlong proliferation of AI technologies, critical questions about who benefits from these advances and whether these changes are necessarily positive for society are often overlooked.[166] The current AI ecosystem is dominated by a few tech giants[167] whose incentives misalign with the public interest, necessitating a radical approach that empowers broader communities to shape this trajectory in line with societal norms. Openness, while not a panacea, can serve as a cornerstone of recent efforts to reverse the many worrying manifestations of corporate consolidation.

Open source—the practice of making software code freely available for anyone to use, modify, and distribute—has already transformed the tech industry over the past few decades.[168] From Linux to Android, open source operating systems and tools have enabled an entire ecosystem of developers, startups, and even big companies to build on top of shared digital infrastructure. This collaborative model has accelerated innovation, improved security through many eyes on the code, and given consumers and developers greater choice in their daily lives.[169] It is by no means perfect, with the systemic vulnerabilities of relying on unpaid labor to run critical infrastructure,[170] and the non-benign incentives of capturing developer mindshare[171] often being the top critiques. However, there is no disputing the fact that it is an effective tool to provide greater access to and transparency of critical technologies to a much wider set of stakeholders than more prevalent closed models.[172]

[166] Peter Dizikes, "Who Will Benefit from AI?" MIT News, September 29, 2023, https://news.mit.edu/2023/who-will-benefit-ai-machine-usefulness-0929.
[167] Competition and Markets Authority, *AI Foundation Models: Update Paper*, April 11, 2024, https://assets.publishing.service.gov.uk/media/661941a6c1d297c6ad1dfeed/Update_Paper___1_.pdf.
[168] Knut Blind, Sivan Pätsch, Sachiko Muto, Mirko Böhm, Torben Schubert, Paula Grzegorzewska, and Andrew Katz, *The Impact of Open Source Software and Hardware on Technological Independence, Competitiveness and Innovation in the EU Economy*, European Commission: Directorate-General for Communications Networks, Content and Technology, 2021, https://data.europa.eu/doi/10.2759/430161.
[169] Mark Perry and Thomas Margoni, "Free-Libre Open Source Software as a Public Policy Choice, " *International Journal on Advances in Internet Technology* 3, nos. 3 and 4 (December 2010): 212–222, https://ssrn.com/abstract=1800902.
[170] Mathieu O'Neil, Xiaolan Cai, Laure Muselli, Fred Pailler, and Stefano Zacchiroli, *The Coproduction of Open Source Software by Volunteers and Big Tech Firms*, News Media Research Centre, University of Canberra, 2021, https://doi.org/10.25916/r8vg-hd09.
[171] Shai Almog, "Open Source Bait and Switch," Java, Debugging, DevOps & Open Source (blog), August 23, 2022, https://debugagent.com/open-source-bait-and-switch.
[172] Francisco Eiras, Aleksander Petrov, Bertie Vidgen, Christian Schroeder, Fabio Pizzati, Katherine Elkins, Supratik Mukhopadhyay, Adel Bibi, Aaron Purewal, Csaba Botos, Fabro Steibel, Fazel Keshtkar, Fazl Barez, Genevieve Smith, Gianluca Guadagni, Jon Chun, Jordi Cabot, Joseph Imperial, Juan Arturo Nolazco, Lori Landay, Matthew Jackson, Phillip H. S. Torr, Trevor Darrell, Yong Lee, and Jakob Foerster, "Risks and Opportunities of Open-Source Generative AI," arXiv:2405.08597v3 [cs.LG], May 29, 2024, https://doi.org/10.48550/arXiv.2405.08597.

Despite these underpinnings and a rich initial history of open science-driven publications, openness in the development and deployment of AI is becoming the exception rather than the norm. In order to counter this trend, many organizations, including Mozilla, are calling for a movement in "public AI"—a robust ecosystem of initiatives that promote public goods, public participation, and public benefit throughout the AI life cycle.[173]

Openness as the Fuel for Public AI

Meaningful openness is a key component of public interest AI because it challenges entrenched and concentrated power dynamics.[174] A few Big Tech companies currently act as gatekeepers to critical AI capabilities, locking up their models, datasets, and tools behind proprietary licenses and steep price tags. This limits who can access and build on top of state-of-the-art AI while further concentrating technical capabilities behind conglomerates.[175] It also means we're largely leaving it up to those few companies to decide the future of the technology—ample evidence from the past two decades demonstrates that that is an unwise call.[176]

By contrast, development catalyzed by public investment with the goal of creating alternative paradigms (public AI) would enable a larger and more diverse set of actors—from startups to academics to civil society—to participate in genuinely steering the technology's future.[177] No single entity would unilaterally decide or control the future of such projects, especially when limited by governance mechanisms. Instead, the diverse contributors would share the responsibility of key design decisions and also suggest improvements to mitigate risks, such as bias, inherent in these systems.[178] This decentralized participation is essential for keeping AI technologies accountable to public interest.

[173] Nik Marda, Jasmine Sun, and Mark Surman, *Public AI: Making AI Work for Everyone, by Everyone*, Mozilla, September 2024, https://assets.mofoprod.net/network/documents/Public_AI_Mozilla.pdf.
[174] Ibid, 10.
[175] David Gray Widder,Sarah West, and Meredith Whittaker, "Open (For Business): Big Tech, Concentrated Power, and the Political Economy of Open AI," August 17, 2023, accepted to appear in *Nature*, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4543807.
[176] Bill Whyman, "AI Regulation Is Coming – What Is the Likely Outcome?" Center for Strategic and International Studies, October 10, 2023, https://www.csis.org/blogs/strategic-technologies-blog/ai-regulation-coming-what-likely-outcome.
[177] Marda, Sun, and Surman, *Public AI*, 23.
[178] Abby Seneor and Matteo Mezzanitte, "Open-Source Data Science: How to Reduce Bias in AI," World Economic Forum (blog), October 14, 2022, https://www.weforum.org/agenda/2022/10/open-source-data-science-bias-more-ethical-ai-technology.

Unlocking the Public Good

None of these success conditions are guaranteed unless we ensure that openness is not used to provide a fake veneer of positivity to further the consolidation of large technology companies rather than advance the public interest.

First, open source tools and models must be truly open and accessible, not just in licensing but in practice. On licensing, it is key that AI that calls itself open source meet the full definition of recent efforts by the Open Source Initiative (OSI). Openwashing is a real risk,[179] and merely releasing model weights provides only some of the benefits we've come to expect from open source.[180] Beyond licensing, the compute and data needed to use (run, train, or both) large-scale and competitive open source AI models remain prohibitively expensive and scarce.[181] To counter this trend, governments and funders must invest in shared infrastructure like public compute, encourage open datasets that meet ethics and privacy standards, and expand public research in universities—prioritizing domains and use cases neglected by the private market and even funding alternatives to them.[182] This effort, which should be coordinated across governments, is necessary to reduce barriers to entry and to enable more public-interest applications of AI in a sustainable manner.

Second, open source AI initiatives funded by these actors must prioritize public participation and accountability, not just openness for its own sake.[183] Impacted communities should have a voice in identifying challenges to tackle and values to uphold. We've already seen the positive impact that grassroots organizations like EleutherAI can have on the ecosystem when centering the community rather than financial incentives.[184] On accountability, which should be enforced in law, public audits, impact assessments, and third-party scrutiny are essential for responsible AI deployment to meet the goals of

[179] Alek Tarkowski, "The Mirage of Open-Source AI: Analyzing Meta's Llama 2 Release Strategy," Open Future (blog), August 11, 2023, https://openfuture.eu/blog/the-mirage-of-open-source-ai-analyzing-metas-llama-2-release-strategy.
[180] Francisco Eiras, Aleksander Petrov, Bertie Vidgen, Christian Schroeder, Fabio Pizzati, Katherine Elkins, Supratik Mukhopadhyay, Adel Bibi, Aaron Purewal, Csaba Botos, Fabro Steibel, Fazel Keshtkar, Fazl Barez, Genevieve Smith, Gianluca Guadagni, Jon Chun, Jordi Cabot, Joseph Imperial, Juan Arturo Nolazco, Lori Landay, Matthew Jackson, Phillip H. S. Torr, Trevor Darrell, Yong Lee, and Jakob Foerster, "Risks and Opportunities of Open-Source Generative AI," arXiv:2405.08597v3 [cs.LG], May 29, 2024, https://doi.org/10.48550/arXiv.2405.08597.
[181] Jai Vipra and Sarah Myers West, "Computational Power and AI," AI Now Institute, September 27, 2023, https://ainowinstitute.org/publication/policy/compute-and-ai.
[182] Marda, Sun, and Surman, *Public AI*, 23.
[183] Alexandra Theben, Laura Gunderson, Laura López-Forés, Gianluca Misuraca, and Francisco Lupiáñez-Villanueva, "Challenges and Limits of an Open Source Approach to Artificial Intelligence," European Parliament, Policy Department for Economic, Scientific and Quality of Life Policies, May 2021,https://www.europarl.europa.eu/thinktank/en/document/IPOL_STU(2021)662908.
[184] Jason Phang, Herbie Bradley, Leo Gao, Louis Castricato, and Stella Biderman, "EleutherAI: Going Beyond 'Open Science' to 'Science in the Open'," arXiv:2210.06413v1 [cs.CL], October 12, 2022, https://doi.org/10.48550/arXiv.2210.06413.

being viable alternatives. The diversity and interdisciplinary collaboration in open source AI communities can help mitigate (but not entirely solve) many of the risks we've also come to expect from closed offerings.

Finally, the benefits of such public AI systems must redound to the public—not serve to concentrate power in the hands of a few—via both industrial policy and competition enforcement. Policymakers should attach conditionalities to public funding, such as open licensing requirements and public governance to ensure effective oversight.[185] Far more effective antitrust enforcement and other regulatory interventions are also needed to provide a level playing field to ensure these alternatives have a fair chance at competing with large players.[186]

Openness as a Tool, Not a Cure

It is crucial to recognize that open source is neither a silver-bullet solution to the challenges posed by concentrated market power in AI, nor will it automatically lead to AI technologies in the public interest.[187] Even open source communities can trend toward homogeneity and concentrate power if not structured intentionally.[188] The steep compute costs required to train and run the latest open source AI can still be exclusionary, favoring well-resourced entities over smaller players and public-interest initiatives.[189] And openness itself does not guarantee responsible development and lack of societal harms.

As Europe charts its course on AI, policymakers, funders, and technologists should invest in the conditions needed for open source to thrive in the service of public interest, while also advancing complementary solutions to structural power imbalances. These include robust antitrust enforcement to prevent anticompetitive conduct and promote a diverse AI market; the attachment of strong public-interest conditions to industrial policy interventions such as government funding for research and infrastructure to prevent it from enriching large private labs; and the development of new models of data stewardship and governance that give communities a stake in how their data is collected and used.

[185] Free Software Foundation Europe, "Public Money, Public Code," 2018, https://publiccode.eu/en.
[186] Barry Lynn, Max von Thun, and Karina Montoya, *AI in the Public Interest: Confronting the Monopoly Threat*, Open Markets Institute, November 2023, https://www.openmarketsinstitute.org/publications/report-ai-in-the-public-interest-confronting-the-monopoly-threat.
[187] Widder, West, and Whittaker, "Open (For Business)."
[188] Alicja Peszkowska, "AI and the Commons: The Paradox of Open (for Business)," Open Future (blog), January 11, 2024, https://openfuture.eu/blog/ai-and-the-commons-the-paradox-of-open-for-business.
[189] Elizabeth Segerand Bessie O'Dell, "Open Horizons: Exploring Nuanced Technical and Policy Approaches to Openness in AI," Demos, September 2024, https://demos.co.uk/research/open-horizons-exploring-nuanced-technical-and-policy-approaches-to-openness-in-ai.

Most crucially, it necessitates ongoing public oversight and accountability measures to audit AI systems for bias, safety, and alignment with societal values.

If our future with AI is still being written, it's time to open up who gets to hold the pen. But openness alone is not enough; we need a holistic approach that bakes in public participation, accountability, and equity from the start. Only then can we ensure that the coming wave of AI technologies truly serves the public good.