

Ideology as driver of purpose for technology: a case for GenAI

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Introduction

Technological advances that herald and drive societal changes over the last 12,000 years have only benefited ordinary people when “landowning and religious elites were not dominant enough to impose their vision and extract all the surplus from the technologies” (Johnson and Acemoglu 2023, 78).

We are again on the precipice of a big transformation for our society with the wide adoption of Artificial Intelligence in all kinds of sectors and embedded in all kinds of software. Generative Artificial Intelligence (genAI), a specific form of Artificial Intelligence harnessing the power of Large Language Models to *generate* new output based on vast and widely generalized data sources, is rapidly transforming our lives. Ranging from reshaping how we work (Joshi 2025) and how we learn (Perifanou and Economides 2025), to changing criminal behaviour (Ferrara 2024) and even influencing democratization (Cupać, Schopmans, and Tuncer-Ebetürk 2024).

Life in the age of genAI however, comes at a tremendous physical cost for our planet (Crawford 2021). The physical extraction of metals (e.g. lithium, coltan) for chips to enable the machines to run the models (Yang et al. 2024), the power consumption to drive the machines and then again for cooling Hotkar (2025) is outgrowing the planned construction of the power grid at a breakneck speed (Lin et al. 2024), outpacing policy and lawmakers.

As with all transformative technologies there is firstly a real opportunity, in the increased productivity and the access to tools. Secondly a real threat, in the form of misinformation, criminal activity, (Ferrara 2024) and the undermining of autonomy (Cupać, Schopmans, and Tuncer-Ebetürk 2024). Thirdly a challenge for the use of resources and electricity that needs new solutions at scale.

Technology is not just a neutral phenomenon with inherently positive outcomes and there is a great need for finding solutions that benefit us all.

Gap

We do not know how AI will reshape the future of our human development, but there are some guesses we can make and historical lessons we can take into account. In all the major jumps in technological advancement that brought about societal change: steam engine, electricity, communications, digital communication and now the more broadly available statistical models that “converse” with us through chat like ChatGPT, we have seen that regulation and policy fueled by ideology (both benefiting the few or the many) has been the driver for the direction this advancement would take us (Johnson and Acemoglu 2023, 57).

In the course of history human development has been argued to increase where agency and liberty increase (Prados de la Escosura 2022; Sen 1999). Much of the research regarding AI has been focussing on improving models [], effects for legislation [], impact on education [], but not increasing agency and freedom which the UNDP describes as indicative of improving human development (UNDP 2025).

What is lacking then from scientific discourse is a systematic analysis of cases where GenAI (or AI in general) has had a positive impact on agency and human freedom to distill which factors are crucial for bringing about such change.

Hook

We need to figure a way out of what Brynjolfsson (2022) calls the “Turing Trap” where technological and economic power create a concentration of political power and find solutions, patterns, systems, beyond policy where the benefits of transformational technology like GenAI are available to everyone.

Research Questions

- What lessons can we draw from existing of patterns using GenAI that enable meaningfully increased human agency?

Sub questions

- How do we measure increased human agency and liberty? (Prados de la Escosura 2022, 25).
- What policies and laws have been instrumental in steering technologically driven societal transformation in the past and where has it failed?
- Which uses of GenAI defy policy or lack of liberty and empowered people?

References

- Brynjolfsson, Erik. 2022. “The Turing Trap: The Promise & Peril of Human-Like Artificial Intelligence.” *Daedalus* 151 (2): 272–87. https://doi.org/10.1162/daed_a_01915.
- Crawford, Kate. 2021. *The Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence*. Yale University Press.
- Cupać, Jelena, Hendrik Schopmans, and İrem Tuncer-Ebetürk. 2024. “Democratization in the Age of Artificial Intelligence: Introduction to the Special Issue.” *Democratization* 31 (5): 899–921. <https://doi.org/10.1080/13510347.2024.2338852>.
- Ferrara, Emilio. 2024. “GenAI Against Humanity: Nefarious Applications of Generative Artificial Intelligence and Large Language Models.” *Journal of Computational Social Science* 7 (1): 549–69. <https://doi.org/10.1007/s42001-024-00250-1>.
- Hotkar, Pranav. 2025. “Why Cooling Costs Are the New Bottleneck in AI Data Centers.” <https://dcpulse.com/article/enterprise-data-center-cooling-cost-ratio-ai>.
- Johnson, Simon, and Daron Acemoglu. 2023. *Power and Progress: Our Thousand-Year Struggle Over Technology and Prosperity*. Hachette UK.
- Joshi, Satyadhar. 2025. “The Transformative Role of Agentic GenAI in Shaping Workforce Development and Education in the US.” Available at SSRN 5133376.
- Lin, Liuzixuan, Rajini Wijayawardana, Varsha Rao, Hai Nguyen, Emmanuel Wedan Gnibga, and Andrew A. Chien. 2024. “Exploding AI Power Use: An Opportunity to Rethink Grid Planning and Management.” In *The 15th ACM International Conference on Future and Sustainable Energy Systems*, 434–41. Singapore Singapore: ACM. <https://doi.org/10.1145/3632775.3661959>.
- Perifanou, Maria, and Anastasios A. Economides. 2025. “Collaborative Uses of GenAI Tools in Project-Based Learning.” *Education Sciences* 15 (3): 354. <https://doi.org/10.3390/educsc15030354>.
- Prados de la Escosura, Leandro. 2022. *Human Development and the Path to Freedom: 1870 to the Present*. New Approaches to Economic and Social History. Cambridge: Cambridge University Press.
- Sen, Amartya. 1999. *Development as Freedom*. Oxford University Press.
- UNDP. 2025. “Human Development Report 2025.” *UNDP (United Nations Development Programme)*.
- Wilson, Michael. 2025. “Data Center Rack Power Costs: A Condensed Analysis.” *Nlyte*.
- Yang, Xuezhi, Haonan Wen, Yin Liu, Ying Huang, Qun Zhang, Weichao Wang, Haiyan Zhang, et al. 2024. “Lithium Pollution and Its Associated Health Risks in the Largest Lithium Extraction Industrial Area in China.” *Environmental Science & Technology* 58 (26): 11637–48. <https://doi.org/10.1021/acs.est.4c00225>.