Centre for Internet & Society

Whose Technology Is It Anyway?

An exploratory essay on the political economy of India's digital revolution

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Introduction

Urban Company – the infamous on-demand labour platform with over $300 million of investor funding – has recently come under another wave of scrutiny for its 'Insta Maids' service, wherein the company promised its consumers a domestic worker in under 15 minutes.[1] [2] Although public criticism has forced UC to make a cosmetic change by replacing the word 'Maids' with 'Help', it is nowhere the only digital entity whose decisions have raised eyebrows in recent years.

From Zomato's seemingly banal red/green decision, to the growing control wielded by the likes of Google, Meta, and Amazon, all the way to the exploitative business models that sustain today's AI economy (Ghibli art, anyone?) – we are seeing our lives become more and more dictated by digital intermediaries that seem pointless at best, and outright harmful, at worst.

So I find this to be the right moment to ask how we ended up here. How, and when, did we reach this conclusion that the only way for society to prosper is by creating yet another digital app that regulates another part of our lives? Why is it that we have been unable to rid ourselves of the advertising revenue model ever since Google cracked it, despite knowing the many kinds of problems it creates?

More importantly, I ask who gets to decide what technologies become a part of our lives? And what if an innovation harms a group of people – since that kind seems to be very popular these days? Do we just accept said harm as a collateral damage done in the name of progress? If not, then what do we do?

In their book 'Power and Progress', Daron Acemoglu and Simon Johnson offer a related insight –

"...we are told [that] the forces of technology are inexorable. We couldn't stop them if we wanted to, and it would be highly inadvisable to try. [...] People understand that not everything promised by Bill Gates, Elon Musk, or even Steve Jobs will likely come to pass. But, as a world, we have become infused by their techno-optimism."[3]

Nowhere is this techno-optimism more abundant than in India's context. Whether it be the global discourse on Digital Public Goods or the industry's starry-eyed belief in the platform economy, it is difficult to not be faced with the belief that digital technologies will solve everything.[4] [5] However, what is left ignored in this narrative of overt optimism is that the success of any technological change depends not just on the innovations we make, but also on the surrounding political and economic choices.

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[1] Sarkar, S. The Hindu, *Urban Company's Insta Maids: Fast delivery, no protections*, 2025.
[2] Traxn, *Urban Company*, accessed 2025.
[3] Acemoglu, D., & Johnson, S. "What is Progress", *Power and Progress: Our Thousand-Year Struggle Over Technology and Prosperity*. Basic Books, 2023, pp.1.
[4] Department of Economic Affairs, Government of India. *Report of India's G20 Task Force on Digital Public Infrastructure*. 2024. pp.3.
[5] NASSCOM, *Unlocking Value from Data and AI: The India Opportunity*. 2020. pp.8.

This essay is my attempt to explore and revive this argument for India's ongoing digital revolution.

In the first section, I argue that the 'process of innovation' – which refers to how we enable technological progress – hinges critically on existing power structures. For example, instead of collectively addressing concerns like 'what is considered as digital innovation?' or 'what deserves to get funded?', we rely on the market's invisible hand and the presumed wisdom of industry leaders to bestow the next best technology onto us.

The second section focuses on 'outcomes of innovation', where I discuss the social, economic, and political consequences of our technological choices. Sure, a necessity might birth an invention, but questions like 'which necessity to address?', 'what technology to address it with?', or 'who is benefited and harmed from this technology?' consist of explicit choices that are often made implicitly.

By comparing the trajectory of our ongoing digital revolution with that of Britain's industrial revolution and Punjab's green revolution, I point out that neither the process nor the outcomes of today's digital innovation are inevitable. Instead, in line with what history tells us, this revolution too rests on the wants of those in power, and – unless we act – it will continue to benefit the ruling classes of our day, at the expense of the oppressed.

Part 1: The process of innovation (or who calls the shots?)

Imagine life in 18th-century England.

Although agricultural and status-driven for the longest time, the region was experiencing a 'middling sort of revolution'.[6] As the centres of power shifted from royalty to owners of private property, it became difficult for traditional hierarchies to sustain themselves. Accelerated by Europe's scientific age, this shift benefited the nation's moderately wealthy men, who were presented with a unique opportunity to grow their stature.[7] Not only were these groups able to imagine and innovate new ways of organizing economic production, the popular market logic of the time further incentivized and encouraged them to do so.

In this case, we see that a changing political landscape, combined with the early capitalist incentive to gain wealth and acquire property, enabled an emerging class of men to bring in historically significant innovations – in what we today refer to as the 'Industrial Revolution'. Thomas Newcomen and James Watt – both of whom are typically attributed for the invention of the steam engine – did not emerge from royalty and were, most likely, not looking to kick-start a chain of global transformations. Instead, Newcomen was an ironmonger and Watt's father was a failed businessman – thus making them highly suitable to exploit the changing winds of the time.[8]

Or, let us consider another technological landmark much closer to our time and place.

Faced with a recurring threat of famines, the Indian state of the 1960s was keenly invested in improving the country's agricultural productivity. From genetically modified seeds, to processed chemicals and fertilizers, to large-scale irrigation infrastructure and novel farming techniques – modernization of agriculture to increase crop yields remained the dominant technological objective for the government.[9] Under what is now known as the 'green revolution', policymakers and industry leaders chose the states of Punjab and Haryana (among others) for a technological experiment to solve the food crisis.[10]

However, the green revolution, too, resulted from a series of choices made by those with political and economic capital. Even something like Punjab's important role in the revolution – which seems inevitable in hindsight – depended on a range of factors. Although the region's fertile land and an abundant groundwater table played a key role, state policies and investments incentivized large-scale

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[6] Acemoglu, D., & Johnson, S. "Middling Sort of Revolution". *Power and Progress: Our Thousand-Year Struggle Over Technology and Prosperity*. Basic Books, 2023, pp.151.
[7] Acemoglu, D., & Johnson, S. "Middling Sort of Revolution". *Power and Progress: Our Thousand-Year Struggle Over Technology and Prosperity*. Basic Books, 2023, pp.156-157.
[8] Acemoglu, D., & Johnson, S. "Middling Sort of Revolution". *Power and Progress: Our Thousand-Year Struggle Over Technology and Prosperity*. Basic Books, 2023, pp.167.
[9] Dutta, S. *Green Revolution Revisited: The Contemporary Agrarian Situation in Punjab, India*. Council for Social Development, 2012, pp.2.
[10] Sangha, K. *Modern agricultural practices and analysis of socioeconomic and ecological impacts of development in agriculture sector, Punjab, India — A review*. Indian Journal of Agricultural Research, 2014, pp.2.

farmers to grow specific crops – such as wheat and paddy – at specific times of the year to maximize agricultural productivity.[11]

Much like these examples, in today's India, a digital revolution appears to be an inescapable step towards the country's stature as a growing economy. But it is also becoming increasingly evident that the process of digital innovation is not quite a collectively agreed-upon decision. Instead, it is dictated by those who own and regulate these technologies.

Consider the emergence of low-price internet in the last decade – a shift that kick-started India's digital economy. Although affordable internet access seems inevitable in hindsight, it was the result of key regulatory and industrial decisions. For starters, the 2012 unified licensing policy and the 2015 telecom spectrum sharing guidelines contributed significantly in reducing entry barriers to the market.[12] Similarly, the acquisition of Infotel Broadband Limited – a startup that had won the 2010 spectrum auctions – by the deep-pocketed Reliance Industries, is largely why the telecom sector saw a downward price war.[13] [14]

Or, take the recent growth of India's much reputed platform economy. From food delivery, ride-hailing, and ecommerce, all the way to FinTech, EdTech, and HealthTech, platform-based startups reliant on large-scale data collection and long-term data retention have emerged in almost every sector we look at.[15] However, it would be a little naive to consider this change as inescapable when we know that the ruling class's desire to leverage our personal data – for profit or for power – is stronger than ever.

Indeed, over the last two decades, political and industry leaders across the world have welcomed Big Tech's early monetization of user data, thereby accelerating a similar pattern of digital innovation on a global level.[16] As an indication, when the phrase "data is the new [blank]" is fed into Google Ngram, the only three results it provides for the last 22 years are: "data is the new oil", "data is the new gold", and "data is the new currency" – clearly revealing the economic potential held by our personal, and often, sensitive, data.[17]

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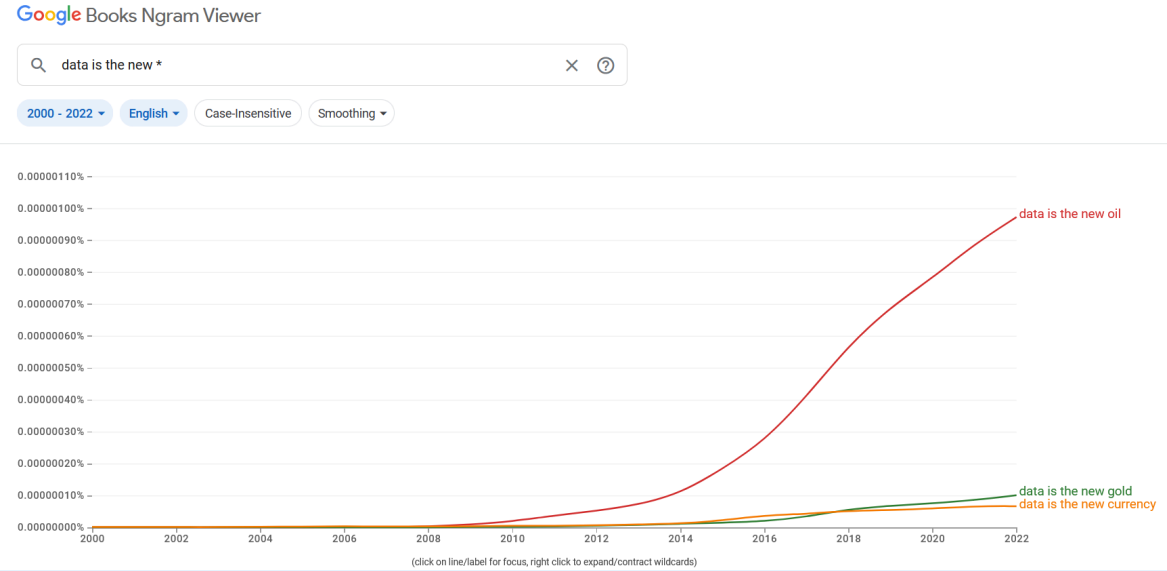
[11] Sangha, K. *Modern agricultural practices and analysis of socioeconomic and ecological impacts of development in agriculture sector, Punjab, India — A review*. Indian Journal of Agricultural Research, 2014, pp.2-3.
[12] Competition Commission of India. *Market Study on the Telecom Sector in India: Key Findings and Observations*. 2021, pp.14.
[13] The Economic Times. *Reliance Industries buys 95% stake in Infotel Broadband for Rs 4,800 cr*. 2010.
[14] Block, D. *Data Plans: How government decisions are helping Reliance Jio monopolise the telecom sector*. Caravan Magazine, 2019.
[15] Kathuria, R., Kedia, M., & Bagchi, K. *India's platform economy and emerging regulatory challenges*. Indian Council for Research on International Economic Relations (ICRIER), 2021, pp.14.
[16] Törnberg, P. *How platforms govern: Social regulation in digital capitalism*. Big Data and Society, 2023, pp.2-5
[17] Author's submission. *"Data is the new *"*, Google Books Ngram Viewer, 2024.



To then consider our process of innovation – one dependent on large-scale digitisation and data monetization – as the only option would be a mistake. Instead, like the industrial and green revolutions, questions such as ‘what counts as innovation?’ or ‘who calls the shots?’ are answered by those with political and economic capital.

But, you may ask, does it really matter who calls the shots as long as everyone reaps the returns of a better life?

Part 2: The outcomes of innovation (or who wins and who loses?)

The story about 18th-century Britain and the rise of innovative men from England's propertied classes is not all rosy.

In hindsight, we know that the incentives that drove the English middle class to innovate were the same incentives that turbocharged climate change, primarily by accelerating mining and the burning of fossil fuels and drove.[18] Similarly, not only was this revolution non-inclusive of women and the landless, it could sustain itself only by engaging in a competitive battle for more profits. At home, this meant unethical labour practices, such as employing children to work in coal mines or under-paying large swathes of landless workers.[19] Abroad, it fuelled colonialism – a European past-time with which we remain very familiar.

Even the much-touted green revolution has a similar double-sidedness to its story.

While modern technologies did, indeed, turn Punjab into India's 'grain bowl', their adverse consequences are also not difficult to identify. For starters, the intensive water requirements of this technological change have depleted the region's water table over time.[20] The crop-rotation techniques that led to the rapid growth in production of wheat and paddy have also led to large-scale stubble farming and soil pollution in the region, along with a clear transformation in the region's cultural fabric.[21] [22]

Due to a narrow focus on agricultural productivity and not total value addition, even the economic consequences of the green revolution were not all positive. Small landholders found it financially difficult to keep up with the competitive demand of these innovations.[23] Not only did this add to economic disparity, it also tied many farmers to a cycle of indebtedness, best noticed in the increasing farmer suicide numbers of the time.[24] [25] Furthermore, Punjab's increased dependence on agriculture and allied sectors also weighed down its manufacturing industry, which could only gradually respond the liberalization reforms of the 90s.[26]

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[18] Acemoglu, D., & Johnson, S. "Casualties of Progress". *Power and Progress: Our Thousand-Year Struggle Over Technology and Prosperity*. Basic Books, 2023, pp.190-193.
[19] Acemoglu, D., & Johnson, S. "Casualties of Progress". *Power and Progress: Our Thousand-Year Struggle Over Technology and Prosperity*. Basic Books, 2023, pp.176-179.
[20] Sangha, K. *Modern agricultural practices and analysis of socioeconomic and ecological impacts of development in agriculture sector, Punjab, India — A review*. Indian Journal of Agricultural Research, 2014, pp.4-5.
[21] NASA Earth Observatory. *Stubble Burning in Northern India*. 2014.
[22] Sangha, K. *Modern agricultural practices and analysis of socioeconomic and ecological impacts of development in agriculture sector, Punjab, India — A review*. Indian Journal of Agricultural Research, 2014, pp.5-7.
[23] Dutta, S. *Green Revolution Revisited: The Contemporary Agrarian Situation in Punjab, India*. Council for Social Development, 2012, pp.7.
[24] The Tribune. *Farm suicides unabated in Punjab, over 900 in 2 years*. 2019.
[25] Dutta, S. *Green Revolution Revisited: The Contemporary Agrarian Situation in Punjab, India*. Council for Social Development, 2012, pp.11.
[26] Reuters. *Punjab, bread basket of India, hungers for change*. 2012.

Indeed, these revolutions provide a glimpse of technological movements that tried to serve the narrow interests of the ruling class – whether that meant maximizing profit or agricultural productivity. It should then not be surprising that the digital revolution of our time is already exposed to a similar set of vulnerabilities. I provide examples of two such trends in support.

1. **Rapid digitisation without accompanying guardrails exposes citizens to data breaches and cyber-fraud**
   Consider the state of data breaches in the country. One analysis found that India ranked fifth in the list of most breached countries in 2023, with over 5.3 million accounts leaked in the year alone.[27] Another research also revealed that the average cost of a data breach in India reached an all-time high of INR 195 million in the last year.[28]

   And although online privacy may seem like an abstract concept with no real-life implications, these incidents of cyber-theft also often include sensitive datasets.[29] Take, as an example, Star Health Insurance – a company that handled 1.75 million claims in 2023-24 alone and reputes itself as "#1 in Retail Health Insurance segment".[30] In August last year, the firm suffered a massive data leak that led to the personal data of over 3 crore customers becoming publicly available, including one's mobile number, PAN, address, and pre-medical conditions.[31] [32] Worse still, a lot of this sensitive data was further popularised through a series of Telegram chatbots that allowed even lay-users to access it in a simplistic way.[33] And this is only one of the many data breaches registered last year – including another one that reportedly even revealed Aadhaar information![34] [35]

   In fact, given the close relationship between the two, it is very plausible that such breaches also fuel the elaborate and thriving economy of phone scammers – many of whom use this leaked information (such as Aadhaar or PAN details) to establish credibility with vulnerable users and dupe them for lakhs of rupees.[36] [37] [38] Now, you might believe that this is just the cost of doing

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[27] The Hindu Bureau, *India ranks amongst the top five most breached countries in 2023, finds analysis*, The Hindu, 2024
[28] IBM, *IBM Report: Escalating Data Breach Disruption Pushes Average Cost of a Data Breach in India to All-Time High of INR 195 Million in 2024*, 2024
[29] IANS. *From AIIMS Delhi to ICMR, data breaches haunt crores of Indians*. ET Healthworld, 2023.
[30] Star Health and Allied Insurance Company Limited, *Swasth Bharat Empowering Lives: Annual Report 2023-24*, 2024, pp. 4-5
[31] *India's Star Health absolves security chief in data leak incident*, Reuters, 2024
[32] PTI, *Personal data of about 3 crore Star Health customers up for sale online; hacker alleges top official for breach*, The Hindu, 2024
[33] ET Online, *Telegram defends data leak accusations by Star Health saying it cannot do 'policing' work*, The Economic Times, 2024
[34] The Hindu Bureau, *Top cybersecurity data breaches in 2023*, The Hindu, 2023
[35] Chakravarti, A., *Data of 750 million telecom users in India being sold on dark web, cyber experts claim*, 2024
[36] Bush, D., *How data breaches lead to fraud*, Network Security, 2016 (7), 2016, pp.11-13
[37] Chakravarti, A., *Data of 750 million telecom users in India being sold on dark web, cyber experts claim*, 2024
[38] Kapoor, M, *Why online scams are on the rise in India*, DW, 2024

business in the digital economy, and that these risks are more than offset by the benefits unlocked by the emergence of data-driven technologies. However, as my next example indicates, many of these presumed benefits are also not universally accessible.

2. **The false flexibility promised by on-demand labour platforms exposes informal workers to job insecurity and economic vulnerability**

   One example that is often cited to defend today's digital economy is the growth of ecommerce and quick commerce platforms. However, in the process of increasing convenience for a certain class of consumers, these platforms have uprooted existing structures of employment and labour under an elusive promise of 'flexibility'.[39] Indeed, despite the many feel-good marketing campaigns, the reality is that a not-so-insignificant amount of platform workers now rely on precarious contractual arrangements, usually with little to no social protection and only a vague understanding of how their services are 'priced' on the marketplace.[40]

   Take the case of Urban Company – a 'hyperlocal' platform that currently is a market leader in labour coordination for beauty and home services. Inherent to UC's operation is its ability to 'match' consumers with skilled workers, who the company classifies not as employees, but as independent service partners using its software to find work.[41] At its core, this classification is adopted to minimise the legal costs associated with employment contracts – such as investments in social security and insurance.[42]

   However, in navigating the market's expectations, platforms, including UC, end up exposing their workforce to the same market forces, whilst offering them little to no relief. More importantly, given the levels of control that platforms exert over their workforce, a growing body of collective action and research is now rightfully questioning how real this claim of independence truly is.[43] [44] [45]

   Firstly, UC's desire to control for service quality on its platform demands that it impose a variety of compulsions on a workforce that should, in theory, be independent. This is, most clearly, evident in the product kits that many workers are mandated to buy from the company for an

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[39] Rathi, A. & Tandon, A. *Platforms, Power, & Politics: Perspectives from Domestic and Care Work in India*. The Centre for Internet and Society, 2021, pp.14-17.
[40] Ponnathpur, R. & Ramachandran, R. *The financial lives of platform workers: A diaries study in Bengaluru, India*. Dvara Research, 2023, pp.13-15.
[41] Jyani, N., Bansal, H., *UrbanClap: India's Largest Home Service Provider*, Asian Journal of Management Cases, 2021, pp.2-3
[42] Steinbaum, M., *Antitrust implications of labour platforms*, 2018, p.2
[43] Pushkarna, A., *Women Gig Workers Protest At Urban Company's Bengaluru Office Over New Work Policy*, Inc42, 2024
[44] Prasanna, A., Padmar, D., Varini G., and Sriram, R, *A Model Law for Platform Based Gig Workers*, Vidhi Centre for Legal Policy, 2024
[45] Sekharan, A., Furtado, C., and Tandon, A., *Gender and collective bargaining in the platform economy: Experiences of on-demand beauty workers in India*, The Centre for Internet and Society, pp.50-51

> estimated cost of INR 10,000-20,000.[46] Subsequently, workers' performance is often tracked through explicit and implicit methods – for example, customer feedback – and they are rewarded or reprimanded accordingly.[47]
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> Among other things, this can include coercive activities such as blocking a worker's account without any intimation and providing them little in terms of redressal, or segmenting workers into tiered categories and offering them varied terms.[48] Indeed, reports circulated last year that the company had also introduced an auto-accept feature for its workers, essentially eliminating the same autonomy that it advertises.[49]

To be clear, I refer to these instances not to present Star Health or Urban Company as outliers of some sort. Instead, I do so because their rather visible and recent experiences lay bare certain contradictions that are becoming apparent in today's digital economy. For Star Health, this tension is visible between a firm's need to collect and monetize user data versus the security risks that this data maximalism creates. For UC, it translates into a platform's need to improve consumer experience versus the control that it must exert on presumably independent workers.

Now, are such contradictions new? Not at all. Evidence from the industrial revolution and the green revolution clearly point to a similar set of contradictory outcomes, i.e. the fulfilment of one goal at the expense of another. The interests of those who own and regulate technologies often supersede the well-being of those who are essential to the same tech – be it workers, women, and the colonies in the case of Britain, the natural ecology and the local peasantry in the case of Punjab, or the consumers and workers in today's digital India.

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[46] Ram, N., *'Future of work' or 21st–century oppressed labour?*, The Centre for Internet and Society, pp.3-4
[47] Sekharan, A., Furtado, C., and Tandon, A., *Gender and collective bargaining in the platform economy: Experiences of on-demand beauty workers in India*, The Centre for Internet and Society, pp.50-51
[48] Business Today Desk, *Urban Company punishes workers for user cancellations, blocks worker ID over poor rating*, Business Today, 2023
[49] Bansal, V., *Urban Company is eyeing profits and an IPO. But gig workers are angry*, Mint, 2024

Conclusion: Liberating innovation from inequality

So, what can we do about these contradictions?

Fortunately, the historical evidence I discuss above partly answers this question. For instance, although the contradictions at the heart of the industrial revolution have not been eliminated, their impact on the masses has surely been blunted by phenomena like workers' unionization, anti-colonial rebellions, and the expansion of universal suffrage.

Likewise, the trajectory of the green revolution also has some learnings for us. While agricultural land in Punjab still remains concentrated among large land-holders, the last decade or so has witnessed popular recognition of the green revolution's harms.[50] In many ways, the ongoing tussle between the government and protesting farmers is really about what solution would best address these outcomes.

Translating these learnings into the context of our digital revolution leads us to a few insights – about our present and possible futures.

- **Firstly, collective and democratic decision-making must drive the process of innovation**
  Although governments are assumed to represent their so-called 'vote banks', in reality, the Members of Parliament (MPs) and Legislative Assemblies (MLAs) that constitute our political class are also bound to other stakeholders. These include not just the party leadership interested in consolidating power, but also a swathe of industry giants whose capital has become necessary to win elections. At the same time, presented above shows that relying on market forces alone to drive innovation can be productive in the short-run, but it also hampers how inclusive and collectively beneficial that innovation turns out to be.

- **Secondly, state action to counteract adverse outcomes is neither inevitable nor a silver bullet**
  The logic that drives today's digital economy – most infamously captured by Zuckerberg's "move fast and break things" – can also back governments into a corner.[51] When all regulation is seen as a cost of doing business and the state's interests also lie in expanding the economy, any opposition to these technologies has to overcome significant policy and popular inertia. We see this happening with the labour codes – which, despite being created in 2020, have only really materialised in a handful of states; and we have seen this happen with the data protection act – whose final version (in 2023) was a far call from its first draft (in 2018), and whose rules of implementation are only just being written.[52] [53] [54] Overcoming this inertia requires us to move

[50] Sharma, E.K., *Time for green revolution 2.0 in Punjab*, Financial Express, 2023
[51] Blodget, H., *Mark Zuckerberg On Innovation*, Business Insider, 2009
[52] Rao, A., *India's Labor Codes: States and UTs to Finalize Rules by March 31, 2025*, India Briefing, 2024
[53] Burman, A., *Understanding India's New Data Protection Law*, Carnegie India, 2023
[54] Ministry of Electronics and IT, *Draft Digital Personal Data Protection Rules*, Press Information Bureau, 2025

away from merely believing the state as a protector of our rights. Instead, we must find value in collective action – as consumers, workers, innovators – that can counter-balance the interests of other influential stakeholders.

- **Lastly, we must invest in imagining alternative structures of technology ownership and control**
  It is also increasingly clear to me that all the contradictions we have discussed in this article emerge out of conflicting incentives – particularly between those who own or regulate our technologies and those who use or depend on them. So while market forces can accelerate innovation, they often thrive on the same incentives that caused the contradictions in the first place. And while state protection can soften the blow from these contradictions, it cannot eliminate them altogether because the underlying incentives are still at play. Getting out of this market and state dichotomy requires us to re-assess these incentives and re-imagine, if need be, the methods and institutions that can truly democratize technological progress.

I understand that the conclusions I draw from these observations might not be universally applicable, but in the end, none of this negotiation is possible as long as we continue to see technological progress as being inherently good.

Instead, as this piece argues, we must step away from the state/market binary and begin to see the process and the outcomes of our digital revolution in the context of the power structures surrounding us. We must question and challenge the ruling classes whom this current path of digital progress truly benefits, and strive to empower the voices of those most vulnerable to its effects. If need be, we must also question if using these digitally extractive technologies is even a necessity, or if there are more effective, ethical, and sustainable alternatives to the problems we face.

Our technologies, and their impact on us, are the results of specific choices made by those in power. Whether this fact changes the way we think about innovation, is up to us. We can ignore it, or we can try to imagine a future where our digital progress is not beholden to the whims of a few powerful gatekeepers, domestic and otherwise.

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