

Paths Forward for the Study of the Digital Economy

Nick Srnicek

Twenty years ago, the digital economy could plausibly have been portrayed as a niche sector. Today, that no longer holds true. Key elements of the digital economy - data, computing, networks, platforms, and so on - are increasingly fundamental infrastructure for the global economy as a whole. This has only become more pronounced with the current Covid-19 crisis, as companies like Amazon, Apple, Google, and Microsoft make plays to expand their digital empires across new work-from-home realities and to implement themselves at the heart of the new surveillance architecture of pandemic healthcare. In this short piece, I want to reflect on where contemporary research on the digital economy stands, and give some thought as to where it has yet to go. There has been a significant and growing body of research paid to the different elements of labour, platforms, and capitalism within the digital economy. But as I hope to show, there still remains major gaps in our knowledge.

Labour

Perhaps the area that has received the most scholarly attention to date is that of workers in the gig economy. Uber drivers epitomise the figure of the worker in the modern digital economy: precarious, ostensibly self-employed, poorly paid, algorithmically managed, and increasingly organised and resistant. Mountains of books and articles have been written about this form of work, its relation to longer-term labour market trends around outsourcing and precaritization, and the parallels to earlier moments of capitalist history before the standard employment relation became the Western norm.¹ We know a great deal about the demographics of the people taking this work, about the legal loopholes that enable companies to evade labour laws, and about how these workers are using new tools and tactics to fight back. The amount of attention paid to this type of work is understandable as a reflection of the ongoing attacks against labour rights and protections - Uber-like work appears as the imminent future of work for many.

While the apparent rise of the gig economy may signal qualitative consolidations in the precaritization of work, the quantitative importance of this work is often overstated, with relatively few workers being involved in such work - and even fewer in the ride-sharing and food delivery jobs that receive the most attention from

1. Steve Vallas and Juliet B. Schor, "What Do Platforms Do? Understanding the Gig Economy," *Annual Review of Sociology* 46, no. 1 (2020); Ursula Huws, *Labor in the Global Digital Economy: The Cybertariat Comes of Age* (New York: Monthly Review Press, 2014); Katherine C. Kellogg, Melissa A. Valentine, and Angèle Christin, "Algorithms at Work: The New Contested Terrain of Control," *Academy of Management Annals* 14, no. 1 (2020): 366-410.

academics and policy makers. Most workers remains outside the gig economy - and even within platform-mediated gig work, more workers are involved in caring for others than in carrying passengers. This is one of the endemic gaps in the literature - the fact that surveys of gig work repeatedly show that household services is the largest type of work being performed via platforms, yet the level of attention this work receives is far less than Uber, Deliveroo, or other similar businesses.² There has been relatively little attention paid to the conditions experienced by these workers, their demographic make-up, or their business model, despite their overwhelming significance to the world of digital work. Given the ongoing growth of social reproduction work in the advanced capitalist countries, this neglect of platform care labour is striking. How is this digitally-mediated work related to the ongoing crises of social reproduction? How does it impact the global chains of care that have been studied by many? How does it reflect class, race, and gender differences - and how is it impacting their consolidation? We currently know little that might help us answer these sorts of questions, and future research needs to focus on carers as much as couriers.

Platforms

If gig work has been a significant focus of academic research, so too has its capitalist firm corollary, the sharing economy. Research on companies like Uber and Airbnb has proliferated in the last decade with a number of scholars patiently taking apart the self-mythologising discourse of innovation performed by these platforms and their investors. The idea that these firms are innovators, democratisers, or even profitable has received sustained (and justified) criticisms from many quarters. The more general business model - that of the platform - has also been analysed from multiple angles. The impact of these intermediaries, and the ways in which they differ from more traditional business models, have been examined by critical scholars, business consultants, economists, and many more. The importance of network effects, the role of cross-subsidisation, and the significance of data to these firms has been well covered at this point, as has the importance of fostering ecosystems of groups with a stake in improving and maintaining the platform.

Much attention has also been given to another widespread internet-based business model, that of the ad-driven (or surveillance-driven) business. Companies like Facebook and Google have built their massive conglomerates on the backs of personal data siphoned off from billions of users. Turning this data into the promise of targeted advertising has become the entire foundation of these companies (despite growing concerns about whether these promises pay off). Yet at the same time, the shadowy data industry that runs parallel to these major platforms - comprised of innumerable data brokers and other similar firms - has faced relatively little scrutiny, either in academic research or in the press. These companies, like Acxiom or Datalogix, are not household names, but they function as surveillance machines just as much as Mark Zuckerberg's platform does. We need

2. Ursula Huws et al., "The Platformisation of Work in Europe: Results from Research in 13 European Countries" (Brussels: Foundation for European Progressive Studies, UNI Europa, and University of Hertfordshire, 2019), 22; Davide Dazzi, "Gig Economy in Europe," Italian Labour Law E-Journal 12, no. 2 (2019): 100.

to know more about these companies - who they are, what they collect, who they sell data and data products to, and so on.

In the past couple of years, attention has increasingly been paid to artificial intelligence (AI) as the deep learning revolution continues to change many aspects of businesses and the economy more broadly. In this vein, the focus has almost solely been on the uses made of AI - for facial recognition, assessing job applications, and so on. A number of scholars have pointed out the biases inherent to many of these systems and the ways in which they perpetuate existing social hierarchies. Facial recognition algorithms have consistently been shown to be inaccurate - particularly so for people of colour. AI systems used to sort through job applications have likewise been revealed as easily gameable and often biased against non-white-sounding names and working class backgrounds. In response to these types of issues, many organisations and academics have put forth calls for AI ethics - a set of principles that would lay out the legitimate, fair, and equal use of AI. While the specifics of these principles vary from proposal to proposal, they all nonetheless remain focused on the use of AI: what is the appropriate way to deploy this technology?

By contrast, the provisioning of AI has seen much less scholarly attention. By this we mean the fact that contemporary AI requires large amounts of not only data, but also hardware and skilled labour. The capacity to create, tune, and deploy an AI system typically lies in the hands of a few AI providers - companies like Amazon, Google, and Microsoft (not to mention Alibaba and Tencent in Asia). These companies are also heavily involved in the world of cloud computing as the basic infrastructure for AI provision. While cloud computing receives some journalistic and critical scholarly attention (as when journalists periodically come to realise how difficult it is to escape Amazon Web Services),³ cloud AI continues to go virtually unnoticed. This is important because, if AI is going to become a widespread economy-transforming technology (and the jury is still out on whether or not the hype will be borne out), then the owners of that technology are in an immensely powerful strategic position. The organisation of contemporary artificial intelligence requires that all but a handful of companies and users rent access to AI services rather than owning these themselves. This leads to an immense concentration of capital in the hands of a few planetary-scale companies, and a relationship of dependency by all other AI-using firms. At the moment, too little attention is being given to the ways in which AI provision, as opposed to AI use, are changing the economy.

That being said, the issues around concentration and specifically Big Tech have received a vast amount of attention in recent years. Whereas not long ago antitrust issues were deemed irrelevant for a world where services are provided for free to consumers (a relic of the Robert Bork school of antitrust thinking, where consumer welfare in the form of prices is the only valid indicator of a monopoly), today it has become common sense to recognise that the leading tech companies are monopolies. The meaning of that term may still be disputed, and the mechanisms

3. Vincent Mosco, *To the Cloud: Big Data in a Turbulent World* (Boulder: Paradigm, 2014); Kashmir Hill, "I Tried to Live Without the Tech Giants. It Was Impossible.," *The New York Times*, 31 July 2020. <https://www.nytimes.com/2020/07/31/technology/blocking-the-tech-giants.html>.

which are driving the monopolisation of these firms is still being debated, but the very fact of their existence is now accepted by nearly everyone outside of industry lobbyists. This scholarly discussion is increasingly reflected in the policy world as well, with Europe leading the way in pro-competition policies and with parties like the Democrats in America appearing to shift towards similar ideas. There are still uninterrogated assumptions about the links between the problems of Big Tech and the size of Big Tech (e.g. will privacy or fake news concerns be reduced by proliferating platforms?),⁴ but the pro-competition side is an increasingly significant body of research.

However, there are still gaps in this literature, particularly on the theoretical side of things. We do not have a very well-defined idea of the relevant markets for any given firm, for instance. Take Amazon: is its relevant market 'online retail in the US?', 'retail in the US?', 'online retail in the world' or something else? Depending on how one defines the market, Amazon can occupy anywhere from 1% of the market to 40% in some countries. Similar issues hold with a company like Facebook. Are they competing with Tik Tok, or do their competitors extend to LinkedIn? Netflix? YouTube? The inability to theoretically pin down a relevant market has led these companies to routinely argue that they in fact occupy only a small portion of the market and that they face threatening competition everywhere. We could use more work on this issue.

Similarly, we do not yet have a well-articulated theory of Big Tech's merger and acquisition activity. We have numerous descriptions of who these companies are buying and we have a growing number of exposés about how these companies are going about the acquisition of smaller companies. But we broadly lack a systemic idea of why Amazon or Google, for instance, are purchasing the companies that they are. On top of this, all of the largest tech companies are increasingly involved in corporate venture capital and other investments into start-ups. These can sometimes be openly contradictory - for example, SoftBank funding both Uber and its rivals - but there are any number of other tensions within the investments of these firms. Tracing out the networks of investments that these companies are making will give us a better insight into the patterns of growth. But we also need theory about capitalist strategy in the twenty-first century. If vertical growth was once the goal of the early twentieth century giants, what is the goal today?

Capitalism

One answer here is the expanding search for ever more data. Companies are to some extent buying up others simply in an effort to harvest new sources of data from across society. The role of data in contemporary capitalism has been very well covered - with the idea that 'data is the new oil' being perhaps the dominant image of the digital economy's novelty. Even before the rise of deep learning, 'big data' was already a well-established object of research, with many scholars outlining how and why companies were making use of their novel access to millions, billions, and

4. Nick Srnicek, "The Only Way to Rein in Big Tech Is to Treat Them as a Public Service," *The Guardian*, 23 April 2019. <https://www.theguardian.com/commentisfree/2019/apr/23/big-tech-google-facebook-unions-public-ownership>.

even trillions of data points. However, the question of 'value' still remains largely indeterminate even when it comes to data. Pinpointing the value of data remains difficult, not only because of uncertainties about its use value for companies, but also because its value is heavily dependent on context. Issues like this are particularly important when considering policies around data sharing and open data, but also nascent ideas around personal data markets (e.g. how to determine the value of one's data?).

More broadly, value in the digital economy is a topic which remains contentious. Some critical theorists have argued for the notion of 'free labour': that our unpaid online activities (e.g. socialising with friends, watching a streaming service, sharing memes, and so on) are in fact value-producing activities within a (modified) Marxist framework. According to this approach, value creation is pervasive within the digital economy, with billions of users doing unpaid work to create the value and subsequently skyrocketing stock valuations of the biggest tech companies. More mainstream accounts have instead focused on ideas of value that go uncounted in GDP figures. Here, concepts like 'consumer surplus' suggest that the major tech companies often create value for consumers that, because of the services' free nature, goes unmeasured by the official national accounts. Users get benefits from Google Maps, WhatsApp, and other services, despite not paying money for them - and this, according to some mainstream accounts, is a vast source of value for the economy. Others have argued for the importance of intangible capital as a value which is increasingly important but poorly measured by existing macroeconomic metrics.⁵ Still others (myself included), however, have argued that these ideas of value creation obscure a more fundamental value capture by the platform giants. Rather than being engines of growth, they instead function more as rentiers that siphon off value from the rest of the productive economy. As we've seen in the case of AI, for example, the concentrated ownership of the digital means of production entails the ability to charge fees for access - without ever relinquishing control or ownership. The issues around monopolisation, provision of AI, and value end up tied together into a system of circulation increasingly dominated by a few companies.

This leads us to another area of relatively little scholarly attention: the globe-spanning nature of these firms is leading to a transformation of existing international hierarchies and the creation of new forms of digital colonialism. While there are a number of notable exceptions,⁶ most of the relevant work on these issues has gone under the more neutral heading of digital trade. In these discussions - undertaken in the academic world but also heatedly in international negotiations within bodies like the World Trade Organization - issues around who owns data, who gets access, and what digital sovereignty entails are all routinely

5. Jonathan Haskel and Stian Westlake, *Capitalism Without Capital: The Rise of the Intangible Economy* (Princeton: Princeton University Press, 2017).

6. Parminder Jeet Singh, "Digital Industrialisation in Developing Countries: A Review of the Business and Policy Landscape" (The Commonwealth, 2018); Michael Kwet, "Digital Colonialism: US Empire and the New Imperialism in the Global South," *Race & Class* 60, no. 4 (2019): 3-26; Nick Couldry and Ulises Mejias, *The Costs of Connection: How Data Is Colonizing Human Life and Appropriating It for Capitalism* (Stanford: Stanford University Press, 2019); UNCTAD, "Digital Economy Report 2019: Value Creation and Capture - Implications for Developing Countries" (Geneva, 2019). <https://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=2466>.

debated. Too often, the debate is presented simply as the virtuous 'free flow of data' versus the reactionary data nationalists, but this neglects the myriad ways in which the unfettered flow of data in fact consolidates the power of the US and China as data inexorably flows towards the platform giants located there. There is very little existing research, in other words, about the ways in which control and power are being built up through these global platforms, and even less on how major tech companies are writing the rules of the global system in their favour. More attention needs to be given to the mechanisms of power and the implications of control here.

Lastly, research on the digital economy has also raised the issue of what the alternative to a world of tech monopolists might look like. For most policymakers, the answer is often smaller companies who will presumably have less power and act more responsibly. The pro-competition policies of the EU are the leading example of this approach. Others have made more transformative efforts to outline what worker-owned platform cooperatives might look like. Ranging from theoretical proposals to actually existing alternatives, this movement towards platform cooperativism offers a striking difference from the monopolistic digital economy form. However, other alternatives to the platform giants tend to have gone underdiscussed. We might imagine here government-supported and/or publicly-owned platforms for care services, for instance.⁷ Yet there is relatively little work that has been done on the potentials - and the immense challenges - that would face such an option. We also lack many detailed studies of individual technologies and their potential to be repurposed within a post-capitalist world. Can there be such a thing as a communist AI, for example? Or does contemporary AI's reliance on mass amounts of data render the technology intrinsically a surveillance tool? What role could cloud computing play in a post-capitalist world? It is worth remembering that in the early ages of the mainframe computer, the emancipatory vision was of a world where people could rely on computing as a public utility. Too often, when we discuss the politics of technology, we fall into binaries of good or bad, when in reality technologies offer a variety of affordances that resist easy categorisation. If we are to build a better world, we need to not only have critiques of this one, but also visions of a better one.

7. Luke Richards, "Automation and Healthcare: An Interview with Helen Hester" (London: Autonomy, 2017). <http://autonomy.work/wp-content/uploads/2018/08/Helen-Hester-Interview-02.pdf>.

References

Couldry, Nick and Ulises Mejias, *The Costs of Connection: How Data Is Colonizing Human Life and Appropriating It for Capitalism*. Stanford: Stanford University Press, 2019.

Dazzi, Davide. "Gig Economy in Europe," *Italian Labour Law E-Journal* 12, no. 2 (2019). <https://doi.org/10.6092/issn.1561-8048/9925>.

Haskel, Jonathan and Stian Westlake, *Capitalism Without Capital: The Rise of the Intangible Economy*. Princeton: Princeton University Press, 2017.

Hill, Kashmir. "I Tried to Live Without the Tech Giants. It Was Impossible.," *The New York Times*. 31 July 2020. <https://www.nytimes.com/2020/07/31/technology/blocking-the-tech-giants.html>.

Huws, Ursula, et al., "The Platformisation of Work in Europe: Results from Research in 13 European Countries" (Brussels: Foundation for European Progressive Studies, UNI Europa, and University of Hertfordshire, 2019).

Kwet, Michael. "Digital Colonialism: US Empire and the New Imperialism in the Global South," *Race & Class* 60, no. 4 (2019): 3-26. <https://doi.org/10.1177/0306396818823172>.

Mosco, Vincent. *To the Cloud: Big Data in a Turbulent World*. Boulder: Paradigm, 2014.

Richards, Luke. "Automation and Healthcare: An Interview with Helen Hester." London: Autonomy, 2017. <http://autonomy.work/wp-content/uploads/2018/08/Helen-Hester-Interview-02.pdf>.

Singh, Parminder Jeet. "Digital Industrialisation in Developing Countries: A Review of the Business and Policy Landscape" (The Commonwealth, 2018).

Srnicek, Nick. "The Only Way to Rein in Big Tech Is to Treat Them as a Public Service." *The Guardian*. 23 April 2019. <https://www.theguardian.com/commentisfree/2019/apr/23/big-tech-google-facebook-unions-public-ownership>.

UNCTAD, "Digital Economy Report 2019: Value Creation and Capture - Implications for Developing Countries" (Geneva, 2019). <https://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=2466>.

Vallas, Steven and Juliet B. Schor. "What Do Platforms Do? Understanding the Gig Economy," *Annual Review of Sociology* 46, no. 1 (2020). <https://doi.org/10.1146/annurev-soc-121919-054857>.