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Data and the Future of Work

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COMMON WEALTH

1. Introduction

When a new decade began a few short months ago, few suspected the world would look like this. The coronavirus pandemic is bewildering because it turns on a paradox. Helping others could be deadly; doing nothing can be the best way to do something; apocalyptic events, it turns out, can feel crushingly monotonous. But not everything has changed. One of the most unwelcome continuities from the world we're leaving behind us is the relentless growth of platform giants and the app-driven future they have sold us under the guise of heightened convenience. As small businesses went bankrupt and workers were laid off, Amazon announced it was hiring an additional 100,000 workers, its founder on course to become the world's first trillionaire.[1][2] Tesla defied state laws to put its factory back into production while a deadly virus crept across North America.[3] Palantir partnered with NHSX to create a store of aggregated patient data that is likely to outlive the pandemic. [4] These companies appear not just immune to the virus, but strengthened by it.

A state of exception can quickly become the state of play. In a recent report for the Intercept, Naomi Klein described how, rather than seeing our altered reality of physical isolation as an unfortunate but necessary protection against further deaths, tech companies are treating it as a "living laboratory for a permanent – and highly profitable – no-touch future."[5] This future is one in which our living rooms, already turned into our offices, become our gyms, our GP surgeries, our schools, our therapist couches; where medicine, teaching and exercise instruction are conducted remotely. It's a future where employees shelter in place and bosses use software

to monitor their keystrokes and GPS coordinates. It's a future of bad jobs – of gig work rebranded as "self-employment", of a hidden army of ghost workers and content moderators tucked away across the world, standing in for "artificial intelligence" and intervening when the algorithms trip up. Crucially, it's a future in which our every action is trackable and traceable – a level of information gathering that initially seemed justified by the threat of a deadly virus, but later became an extension of the same "convenience" that gave us Deliveroo.

We already have the tools to build this future. What it relies upon is access – to us, to our public services, our cities, our societies and communities. The pandemic presents an unprecedented opportunity for tech companies to claim this access is the price of safety from another outbreak. It's no surprise that Apple and Google have put themselves forward to assist with the development of an NHS contact tracing app, nor that individuals like Eric Schmitt, executive chair of Alphabet Inc., Google's parent company, sees China's boundless appetite for mass surveillance and data collection as a blueprint for our post-Coronavirus future.[6] At this point in time, it's crucial to ask what a more equitable tech future might look like: one where data is collected and stewarded in common based on consent, where the purpose of technologies is democratically discussed and their limits collectively agreed upon, where workers could use data to build shared power and solidarity – and where the tools we buid are in service of a common good.

Among the areas of life affected by the pandemic, work is perhaps the sphere that has been most radically reshaped. In March, when workplace closures and self-isolation became government policies, the world began to trial an unprecedented experiment in working from home. But as middle class occupations and "knowledge workers" stayed home, the people who service

our supermarkets, hospitals and transport network kept going to work, often without protection against contagion. And of course, the home has always been a site of work: sharply gendered and typically unwaged, our reliance on the work of social reproduction within the home to sustain the wider economy has been thrown into sharp relief. Work is where inequalities are exposed and amplified, between those who have the ability to shelter in place, and those who have no choice but to put their lives on the line; between those who have the security blanket of a permanent contract and pension, and those who have no insulation against economic downturns. Our workplaces are also where new technologies are trialed and inequalities are laid bare – but also where power is built and exercised, where progress can be made and where vested interests can be challenged. So it seems appropriate that, in sketching a path to a better technological future, we start here, with work.

"If you're algorithmically managing people you don't have to pay for an HR department. You're essentially relying on thousands or even millions of customers to rate people through a star-based point system to determine who stays and who goes in your company."

Max Dewhurst
Bicycle courier and
IWGB Vice-President

Photo credit: Orlando Gili

2. A New World of Work?

It has become a clichéd truism that robots – which won't get tired, complain or unionise – are coming for your job. But a cursory glance at history shows this fear is neither novel nor wholly accurate. Automation anxiety has a long history. In the 1930s, John Maynard Keynes warned of a new disease – "technological unemployment". [7] In 1961, the former US president John F Kennedy established the Office of Automation and Manpower to study the "major domestic challenges of the 60s: to maintain full employment at a time when automation, of course, is replacing men".[8] As fears of technological obsolescence grew, his successor Lyndon B. Johnson inaugurated the National Commission on Technology, Automation, and Economic Progress to examine the risk of robots usurping human labour. The reality, then as now, is that new technologies aren't disrupting the economy as much as their advocates suggest.

The resurgence of automation anxiety is a symptom of our era: one where the world's economy has failed to create sufficient employment and people have begun to question global capitalism's legitimating premises with growing unease. Concerns about automation flare up when the economy is failing to provide sufficient employment opportunities. Robots offer a ready explanation to people living in an economy that doesn't function. As the academic Aaron Benanav writes, "the decline in the demand for labour is due not to an unprecedented leap in technological innovation, but to ongoing technical change in an environment of deepening economic stagnation".[9] This fall in labour demand "manifests not

as mass unemployment, but rather as mass under-employment, not necessarily a problem for the elites", he writes. Stories of a foreboding "jobspocalypse" mask a deeper issue: the economy is failing to deliver prosperity or decent full employment for many. It's far easier for the entrepreneurs and investors at the helm of our new tech economy to gesture towards an army of spectral robots than concede to the reality of economic stagnation. After all, the weakened labour bargaining power that results from under-employment is hardly a risk to their business model.

But this doesn't mean that workers shouldn't be worried about new technologies. Anyone who works is right to be concerned about advances in AI, data collection and digitisation, because these tools encompass a new infrastructure of control that will further empower management, both socially and economically, further tilting the playing field toward capital over labour. More than the phantom of job obsolescence, it's the consolidation of corporate power that haunts the labour market. The ability to accrue volumes of data about employees and to use AI to compare and interpret this data in order to make predictions about workers' productivity and output, or to inform hiring decisions, poses a threat to all of us. "The history of management is one of attempting to measure and control work. You can trace it through to factories, which began to measure peoples' output, and brought in supervisors", the researcher Jamie Woodcock says. "Then there was the advent of new technologies, in places like call centres, which are incredibly surveilled. But in a sense, [digital technology is] just a continuation of the process of the factory".[10] This dynamic is particularly salient in two recent developments. First, in the rise of platform work, which deepens a longstanding shift towards outsourcing and the weakening of labour protections, undermining the hard-won rights and protections of the traditional employment contract. Second, in the deployment of new technologies to monitor the output of workers.

3. Platform Employment

Employers like Deliveroo and Uber are "attempting to do a very old thing: to measure peoples' output in order to control and exploit them," Woodcock explains. Platform employment fuses advances in digital technology with a longer-term shift towards the casualisation of work. Employees – often referred to by platforms as "contractors" or "freelancers" to eschew the burdens of labour protections – use online platforms to access task-based contracts for on-demand services. This could be a platform like Uber or Deliveroo, where the organisation controls the marketplace and distributes particular jobs, or a crowdsourcing marketplace like Amazon Mechanical Turk, Crowdflower or TaskRabbit, where individuals advertise particular tasks through the platform.

Eleven percent of the UK's labour force have already earned some form of income from digital labour platforms, and by 2025 an estimated one third of all labour transactions will be mediated by digital platforms.[11] Although the majority of the UK workforce aren't employed by platforms such as Uber or Deliveroo, it would be shortsighted to assume those in permanent or stable positions aren't affected by the economic reality of platform work. Digital labour is the child of low wages and economic stagnation and reflects a longer trend in employment outsourcing that first took root in the 1970s. Platform employment affects many more people than Fiverr freelancers and Uber drivers. Platforms have accelerated the fracturing of employment protections and reengineered a shift
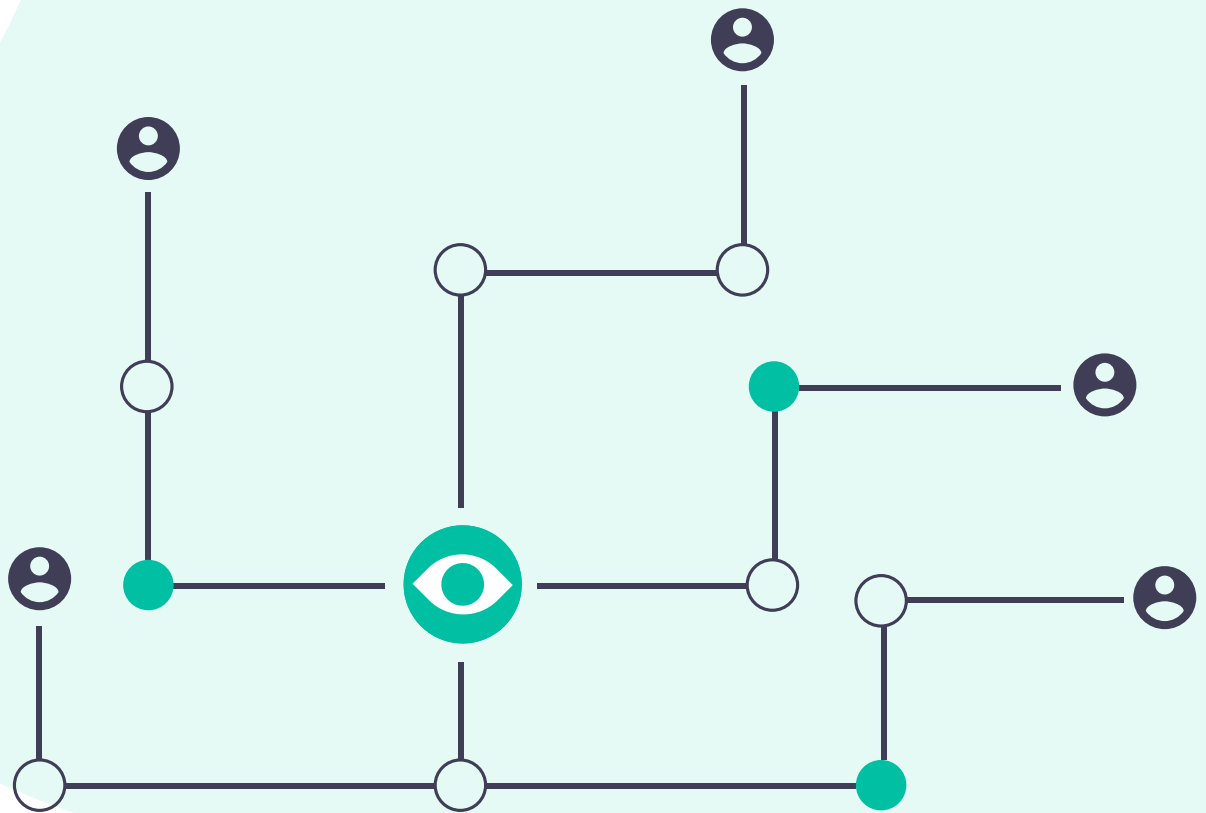
towards freelancing and contract work, a trend that has been occurring since the second half of the 20th century. Indeed, just as Thomas Piketty argued that falling inequality in the post-war period was an aberration in the longer history of inequality,[12] we may find that employment in the long twentieth century was an exception, with 21st century work increasingly akin to the piece-work, craft-work, and self-employment of the 19th century. This also has implications for jobs that were once considered "secure" or "good", bypassing hard-won worker protections and the security of organised labour. An example of this, as Mark Graham and Jamie Woodcock note, is the new platform currently being proposed for the NHS where nurses would bid for shifts, rather than receive more stable contracts.[13] We can also expect that as workers and

companies endure the economic shock that has resulted from this pandemic, we'll see an increase in outsourcing and freelancing practices as traditional corporations and white-collar companies shift the burden of economic risk onto individual workers. In the future, you're increasingly likely to be bidding for a contract than securing a job.

The spatially fragmented nature of platform work also means workers find it more difficult to collectively bargain with employees. "In online systems like Amazon Mechanical Turk or CrowdFlower", writes the researcher Trebor Scholz, "it is mysterious where the labour is coming from, who is requesting it, and what they are intending to do with it. The workers are tucked away".[14] Without moments in the day when workers regularly share the same space, opportunities to organise collectively become scarce. As the researcher Dawn Gearhart puts it, "unions cannot collectively bargain with an algorithm, they can't appeal to a platform, and they can't negotiate with an equation".[15] With crowdsourcing platforms like AMT and Crowdflower, all you need is an internet connection. Decentralised workers log on to a centralised system to fulfill contracted tasks. They are self-facilitating nodes within a digital supply chain who never meet their employers and don't have colleagues. And the globalisation of crowdsourced platforms places workers around the world into competition with one another. Workers in poorer countries can bid for the same jobs at half the price. Combined with the stripping back of labour protections and diminished opportunities for unionisation, pressure pushes downwards on wages and rewards flow upwards to shareholders.

Again, the effects of spatial fragmentation aren't just a concern for platform workers. During the pandemic the world has trialed the first collective experiment in working from home. Already, companies such as Twitter and Square have announced

they will be making this policy a permanent option for employees. Once the lockdown is over, many workers who were able to stay at home during the pandemic will question the utility of the office and the justification for mandatory office hours. But we shouldn't welcome these changes uncritically. Despite its constraints, the office afforded opportunities for marginal resistance – you could turn up to work, but you weren't always present on the job. Without a workspace and regular contact with colleagues, the chances to share gripes, hatch plans, push for pay rises and discuss the mundane details of recent TV series are all diminished.

"Once we had all the data about how long [Uber] drivers worked, what their expenses were, and what they were getting paid, we were able to say, definitively say, that 96% of the 80 000 drivers in New York City were making less than the legal minimum wage."
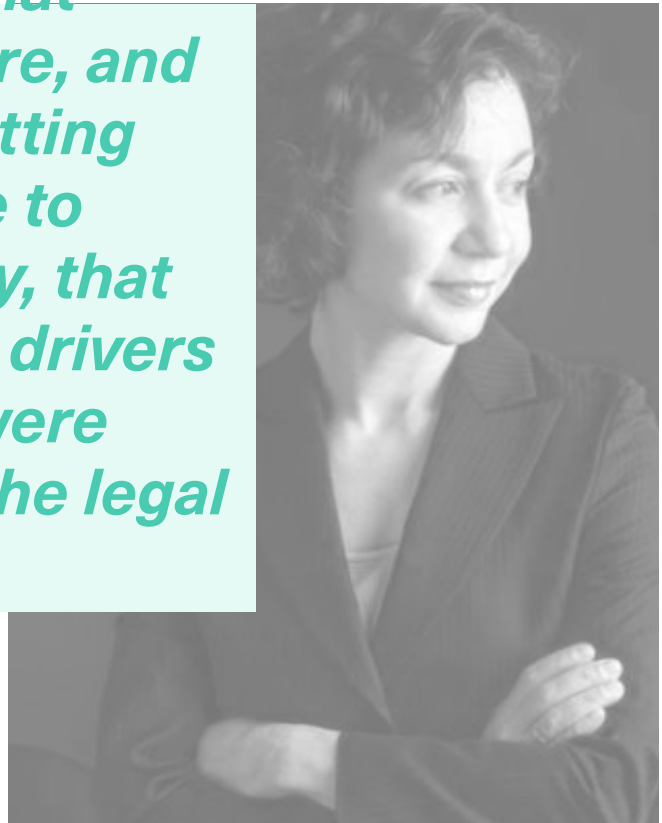
Meera Joshi
Former Commissioner of the New York City Taxi and Limousine Commission

4. Punitive Technologies

The emergence of platform work coincides with the use of technologies in the physical workplace as a way to distribute tasks, manage workers and measure their outputs across a range of fields – from courier drivers who are scored according to the number of packages they deliver within a particular time frame, to Amazon warehouse employees whose every movement is tracked and measured and call centre employees whose calls are monitored and performances appraised by algorithms. These new technologies deepen existing power imbalances and allow for a kind of digital Taylorism on steroids.

The intensification of work has always been an objective of employers; from brick making in Roman foundries to Henry Ford's production line, people have long broken down tasks into pieces to extract maximum productivity. During the 1980s, this reached fever pitch with the introduction of just-in-time supply chains and the principle of lean production, or "Toyotism".[16] Space and time became key weapons in the armoury of companies attempting to extract productivity from their workers. A revolution in management, devised by Japanese engineer Taiichi Ohno, divided work not into hours or minutes, but seconds. Ohno devised what later became known as the "Toyota minute" - a standard prescribing 57 seconds of work per minute, with 3 seconds of downtime. In doing so, he empowered managers to closely monitor their employees, and altered the very concept of time within the factory.

Nowadays, this logic has been amplified by computerised technologies introduced in the workplace, particularly wearable devices that track workers' movements within their workplace. These have resulted in what the scholar Ursula Huws refers to as a kind of labour "densification".[17] Through the use of computerised technologies that monitor workers' movements, employers now have even greater oversight of the labour process, squeezing as much productivity as possible from workers, and allowing for few – if any – moments of downtime during the working day. Nowhere is this more evident than in the Amazon fulfillment centre, a space where two trends, the technological densification of labour, in particular the company's arm-mounted-scanner that tracks employee performance, and the evisceration of employment protections through zero-hour contracts and union busting, have converged. In Amazon's fulfillment centres in the US, workers are pressed to "make rate" – packing hundreds of boxes per hour and losing their job if they don't move fast enough. Robotised systems monitor employees' "time off task"; if workers break from scanning packages, their wearable scanner generates a warning that can result in an employee being fired. According to reporting by the Verge, Amazon "consistently terminates fulfilment centre associates for failing to repeatedly meet the standardized productivity rates" – and has fired hundreds of employees for failing to meet strenuous productivity targets.[18] In Germany, the company has distributed "inactivity reports" on employees; in one of these reports taken from 2014, an employee is accused of "talking with others between 7.27 and 7.36AM."[19]

Technologies trialed in the low-waged platform sector are also being turned towards white-collar employees and so-called "knowledge" workers. During the pandemic, without presenteeism as evidence that employees are "working", managers have searched for new ways to monitor and quantify what people are doing at

home.

Demand has surged for software that allows bosses to monitor their employees – with programmes allowing employers to track the words they type, take screenshots of their work, and rank employees with the data they collect, according to who is spending too much time on Facebook.[20]

"Data threatens to massively boost the already overwhelming power of employers in the workplace", the trade union researcher Victor Figueroa writes.[21] Developments in artificial intelligence and machine learning make this threat more acute. Artificial intelligence can be used to compare and analyse biometric data and make predictions about peoples' future actions. What if an employer built an algorithm that could generate a risk score for every staff member based on their likelihood of unionising? We've already seen companies using AI to screen candidates in job interviews, with AI reflecting and reinforcing human biases and prejudices. The risk of AI isn't in the human-shaped robot that will take your job, but in the power it affords to employers, which have long been wary of worker insurgency. Collecting data and using this information to shape AI-generated predictions may simply provide a new armoury of tools that deepen existing power imbalances in the labour market.

A History of Workplace Anxiety

1930

John Maynard Keynes publishes *Economic Possibilities for our Grandchildren,* which warns of a new disease – "technological unemployment".
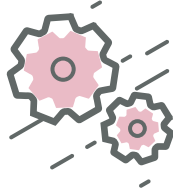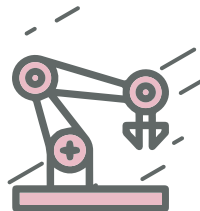
1961

The former US president John F Kennedy establishes the Office of Automation and Manpower to study the "major domestic challenges of the 60s: to maintain full employment at a time when automation, of course, is replacing men"
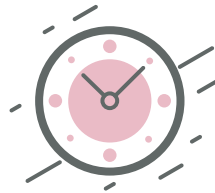
1988

Taiichi Ohno devises the "Toyota Minute" – a standard prescribing 57 seconds of work with 3 seconds of downtime

2017

The US places data and e-commerce at the centre of the WTO Trade in Services Agreement (TiSA)

2025

An estimated one third of all labour transactions will be mediated by digital platforms

5. The Dynamics of Our Digital Economy and the Role of Data

Our digital economy has spawned a number of epithets, of which "surveillance capitalism" is perhaps the most famous. But terms like "platform capitalism" and "surveillance capitalism" can occlude as much as they reveal. Rather than a particularly novel form of capitalism or a perversion of an otherwise balanced market economy, it's perhaps simpler to understand technology companies as capitalism doing what capitalism has always done – driving toward the assurance of future profits, killing off competition, extracting resources and labour across global chains of production and accumulating financial power. Capitalists have long expanded at the frontier and pushed forward to colonise new sources of value, whether land, labour, or human experience. Data extractivism is a natural extension of this long-standing dynamic.

Although digital capitalism is a continuation of what came before, it also signals an important change. Digital technologies feed off our psychological disclosures and our desire to share and broadcast our selves, in turn shaping and drawing out those desires. When we update our Instagram stories, post a video to Facebook or retweet an article on Twitter, we are helping to create

a panopticon of data trails and targeted advertising. Our complicity in digital capitalism as self-surveilling subjects makes it less easy to judge who is gaining what from technological developments. So too does the convenience meted out through new technologies. Take Amazon, for example; by slashing prices and subsidising products like Prime and Kindle to force out rivals, its monopolistic intent has resulted in affordable products that we willingly consume, which in turn become the conduits for building data-rich profiles of our reading and shopping habits, further bolstering Amazon's dominance. Its online marketplace has allowed numerous small businesses to sell their products on the web and take advantage of the company's logistics and delivery services. At the same time, Amazon workers labour in inhumane conditions, urinating in bottles, subject to workplace injury and pain. High streets suffer as the consumer base for local shops and hardware stores drifts online. Our world has been sculpted by the smooth velocity of technology companies that voraciously extract and commodify data, driving forward into new terrains of capitalist accumulation.

What we've been sold is convenience, efficiency, and cheapness. But cheapness comes at a cost to society. Every time we like, click and share, we are participating in activities that yield economic value for others. Though digital technologies are pitched as fun and convenient, they are also a form of value creation. And nowhere is this process of value creation more clear than in the workplace. "In a sense", writes Figueroa, "work now consists of two elements – the work process itself, and the data that the worker produces about the process, and about themselves as a worker."[22] Employers can collect information about how long it takes a worker to answer an email, respond to a request or pick up the phone. In the same way that Amazon builds pictures of our consumption habits, it can sketch richly informed profiles of its employees.

Data is often compared to oil. It's accrued through a similarly extractive process: by drilling into the recesses of our domestic existences and personal preferences. Where companies have shifted towards intangible assets, and intermediary platforms (like Amazon Web Services cloud computing platform) have superseded older forms of industrial production, the ability to extract data and render it usable has become the promissory note of economic power in our global economy. But data is distinct from a commodity like oil in a number of ways. First, one of the primary purposes of extracting data is not to drive cars or produce plastics, but to impel future commerce. By learning more about our demographics, shopping habits and lifestyles, technology companies hope to monetise our future attention, and sell this captured attention to advertisers.

Moreover data alone is a worthless resource. When data accumulates, it is those who oversee the storage, analysis and retrieval of this data who hold sway. Data is about power, and power resides firmly in the hands of those able to interpret, tell stories with and determine what we see in data. In other words, the power and value of data is located in what it's used to reveal and the actions it allows for on what terms. Data analytics – the suite of tools and techniques used to inspect, clean, transform and model data – are often presented and sold as a means by which hidden value can be unearthed, competitive insight gained, and new value tapped.

Without the ability to analyse data and make it "speak", data is information, but not knowledge. For this reason, companies invest enormous sums in data analytics, whether leasing Google Analytics to track visitors to a website or establishing a consumer loyalty programme to retain customers. Across the board, both data and the tools to analyse and capture it at scale – the hardware, analytics tools and engineers – reside predominantly in the hands of the private sector. Who, or what, is the source of this data?

Much of it flows uniformly from consumers and workers toward technology firms. This asymmetrical relationship leads to what the business scholar Shoshanna Zuboff refers to as a "secret text", the behavioural data that companies collect from us to improve their services and products.[23] The most important data is often the information that we're not aware of being collected – the metadata that could suggest our voting intentions from what we like on Facebook, or whether we use exclamation points at the end of a sentence.

This model of data extractivism blurs the categories of user, creator and worker. Nobody directly "produces" data – rather, the act of data collection and interpretation is only made possible with the presence of a surveillance infrastructure. If anything, data is a byproduct of our actions that only exists because a company or individual built the infrastructure to collect it. Nonetheless, that data is collected from our daily activities, often without our consent. This has far-reaching implications for how we think about ownership, both of the data that would not exist without our digital activities, and of the tools and infrastructures used to surveil, collect, analyse and use this information.

This asymmetry between user and worker on the one hand, and the private companies that collect and interpret our data on the other, is a black box - a way of scrutinising others without facing scrutiny oneself. Technology companies "seek out intimate details of potential customers and employees' lives, but give regulators as little information as they possibly can about their own statistics and procedures", writes the legal scholar Frank Pasquale.[24] Despite incursions into our personal privacy, the data and metadata that technology firms and employers accrue is not held to the same standards of transparency. And yet it plays an important predictive role in everyday life: our digital footprints – from our purchasing

histories to the number of times we visit a particular website – inform our credit ratings, risk scores and employee profiles, with little opportunity for oversight. In this way, existing patterns of data collection and analysis have deepened the immense power of technology companies and allowed economic rewards to flow upwards.

But it would be naive to assume that the end goal of data collection is merely advertising revenue and the stimulation of future consumption. Companies like Google are no longer only interested in selling advertising, but in building artificially intelligent machines. To develop advanced artificial intelligence, algorithms must be trained on huge amounts of data. Advances like Google's self-driving cars have made progress because of the data that has allowed developers to improve AI approaches like neural nets. "Ultimately", write Evgeny Morozov and Francesca Bria, "whoever controls the means of producing the most data obtains the best AI, making everyone else dependent on it and allowing AI to be fashioned as a service accessed on a permission-based basis". [25] Such services can then be leased to the public and private sector. They are the future infrastructures of the worlds we inhabit. Ownership of these machines and forms of intellectual property will afford technology companies unwarranted decision-making power in our everyday lives. And this power to decide upon the future shouldn't be enclosed within the private sector, but held in common.

"The history of management is one of attempting to measure and control work. You can trace it through to factories, which began to measure peoples' output, and brought in supervisors. Then there was the advent of new technologies, in places like call centres, which are incredibly surveilled. But in a sense, [digital technology is] just a continuation of the process of the factory"

Jamie Woodcock
Senior lecturer at the Open University

6. Zooming Out

The centrality of training data for AI explains why Google has been so keen to position itself within the market for "smart city" products. The smart city, an urban area that uses networked devices like internet kiosks, WiFi networks, smart metres and RFID tags to collect aggregate citizen data, spatially grounds the dynamics of data extraction and analysis we've already examined. Alphabet, Google's parent company, has become a market leader in the development of smart city technologies. Its sister company SideWalk Labs partnered with the Canadian government agency Waterfront Toronto to develop 12 acres of waterfront south of downtown Toronto. After numerous snags, the project was recently suspended due to concerns over the volume of data that would have been collected.[26] But SideWalk Labs is an instructive example of what tech companies stand to gain from us. The goal: to turn all of social life into a factory, our infrastructures, relationships and built environments sites for the extraction and monetisation of data and the consolidation of power.

In 2018, Eric Schmidt thanked Canadian taxpayers in an announcement for creating some of Alphabet's key artificial intelligence technology (the intellectual property of which Alphabet owns). [27] The data extracted from the public realm, in other words, is the material for training privately-owned artificial intelligence. As Bria and Morozv note, "such AI-powered services can then be used to further optimise how the city runs and operates" – deepening the grasp that tech companies already have over our everyday

lives by entrenching them as an inescapable fact of our urban landscape.[28] This is particularly salient in a context of austerity, where enfeebled municipalities and local authorities give away data in exchange for nominally free Wi-Fi services and traffic analytics software that private tech companies provide to city planners. These services are, on first glance, a "good deal": an otherwise worthless resource that city planners may not be in the habit of collecting or measuring is given away in exchange for useful free services. But this dynamic can lock cities, and the public sphere more generally, into a vicious circle where the more infrastructure and services they subcontract and privatise, the more assistance they require from technology companies, which retain ownership of this infrastructure. As Bria and Morozov note, this phenomenon is not unique to cities: nation states also display the same imperative.[29] The NHS, for example, has welcomed the services of DeepMind, the UK based AI company acquired by Google in 2014, and has allowed the company to access patient data of more than four million people through its algorithms with the goal of predicting and fighting disease.[30] More recently during the pandemic, Palantir has stepped forward to create a store of aggregated NHS patient data, while Google and Apple have offered their services to the NHS to design a contact-tracing app.

This collection of data for the purpose of training AI has implications that extend far beyond individual companies or nation states. The internet exists in the popular imagination as an open, global cyberspace, data-driven technologies are in reality closely tied to geopolitical interests and questions of national sovereignty. Broadly speaking, the US and China are the key countries developing new technologies and artificial intelligence capabilities. China's vision of data collection and

data-driven technology is based upon extending privileges to citizens through its domestic social credit system while maintaining an internet that is closed to outside influence. The US, meanwhile, has been a leading exponent of a globalised, open digital space where data collection is premised on the provision of services that are either subsidized (Amazon Prime) or free (Google Mail).

It's telling that the US placed data and e-commerce at the centre of the WTO Trade in Services Agreement (TiSA) in 2017, designed around a "borderless, digitised global economy in which major technology, financial, logistics and other corporations like Amazon, FedEx, Visa and Google can move labour, capital, inputs and data seamlessly across time and space without restriction."[31] As the scholar Deborah James notes, the US also wants to force open "new markets, while limiting obligations on corporations to ensure that workers, communities or countries benefit from their activities".[32] The US' digital agenda is a Trojan horse: an open digital space whose main beneficiaries are existing technology companies. This globalised agenda benefits transnational corporations and locks us into the existing "black box" of power relations between corporate interests, workers and citizens.

Can we stake a progressive future on privately owned data infrastructures? Are the designs of Alphabet, Amazon, Cisco, Huawei, Microsoft and so on inscribed into the tools they use? Or could these tools be reappropriated for progressive ends? Who has the power to intervene, and how do we decide democratically upon the direction and limits of technological development? And can we even afford

technologies such as AI in an age of environmental breakdown? These questions go beyond the scope of this paper. But a starting point is understanding algorithms and digital infrastructures as a meta-utility that computes the world around us. When thinking about creating an alternative to this meta-utility, we must also consider technological sovereignty: how we could build something different, shaped by policies that put the interests of society, workers, and the commons at their centre.

7. Policy Recomendations

Waged labour is defined by sharp asymmetries of power between workers and employers. This imbalance – which reflects and reproduces stark background inequalities of power and resources in our society – structures the nature and purpose of work, hardwires relations of domination and exploitation into the labour market, and enables the upwards extraction and concentration of surplus value from labour to capital. Work in the platform economy – defined on unequal terms, with minimal scope for collective bargaining, and without the hard-won protections of the employment relationship – sharply intensifies these processes.

The effects of Covid-19 have both exposed and amplified long-standing inequalities in work. Its impacts have been unevenly felt, with working class and ethnic minority people hardest hit economically and in health terms – the virus may not discriminate, but how we organise our society does, both structurally and systematically. What's more, as much of the economy has gone into economic hibernation, emerging fitfully to an uncertain future, the platform giants have thrived. Absent change, Covid-19 is likely to lead to a dramatic upwards shift in ownership and control within the economy, consolidating among the tech monopolies and other major corporations. This consolidation of power will inevitably have important and further disequalising consequences for the organisation of work and the distribution of wealth.

Yet the crisis has also reminded us what forms of work are truly essential: the work of producing and sustaining life, that is too often undervalued and ignored, deliberately made invisible and insecure. A new common sense is rapidly emerging, one that insists we can and must build back better, not just by reinflating the old economy, with its insecurities and structural inequalities, but by building a new economy that is reparative, sustainable, and just by design. This would meet a systems crisis with an agenda for systemic change. In place of the economics of enclosure and extraction, a 21st century commons founded on stewardship; in place of concentrated economic power, a new ecosystem of democratic ownership, governance and control to reimagine how we create and distribute wealth; against austerity, an ambitious mission-oriented investing state, new models of public ownership and a reimagined household economy that challenges sharp hierarchies and injustices.

We are in a moment of rupture, our future undetermined. The need for a new settlement is clear; on what foundations, in whose interest it will be built, remains to be decided, the subject of politics and struggle in all its dimensions. There is no guarantee the crisis will not be resolved on terms that deepen inequality and further hollow out the capacity of democratic action to decide and order our collective futures. If this is to be a generative moment, transformation must centre a politics of work that actively extends democracy, secures dignity for everyone, and ensures we share in the wealth we create in common.

Securing a future of good work for all requires overcoming the inequalities that structure work. Work

reimagined should bring to life an "alternative vision of wealth and experiment in ways in which human labour can be employed for the production of solidarities, mutual pleasures, and beauty,"[33] shaped by "accountable procedures, open to participation and responsive to needs."[34] The extension of social control over economic institutions can ensure people have "broadly equal access to the necessary means to participate meaningfully in decisions"[35] affecting their lives, with workplaces reorganised as spaces to pursue "people's development and exercise of their creative and productive capacities in cooperation with others."[36] And it means centring and supporting new forms of labour and value, rooted in solidarity, care and creation. As Alyssa Battistoni writes, work should be "oriented toward sustaining and improving human life as well as the lives of other species who share our world."[37]

Three foundational steps are required to secure this alternative future of work. First, to overcome the power imbalance that structures work and leaves too many insecure, we need a new deal at work that guarantees vital protections and security for all workers. This should include both stronger and properly enforced employment rights for all and unions with a strengthened ability to negotiate better terms and conditions for workers. The decriminalisation of work for migrants, as outlined by the Joint Council for the Welfare of Immigrants, should be a crucial part of this agenda, ensuring that employment rights are respected regardless of citizenship.

Second, to address the background inequalities of resource that structure the asymmetrical terms on which

work is organised, we need to guarantee a minimum income for all through a comprehensive social security system and an ambitious universal basic services agenda, ensuring people can live freely and well outside of the market, with the power and security to exit from bad forms of work.

Third, to reshape the company from a space of private control to a social institution in which workers and society have a genuine stake and a say, we need to reallocate and democratise coordination rights within the firm.

Finally, we need to adopt specific measures that reimagine the use of platform technologies to better support the capacity of workers to organise, bargain, and creatively experiment, rather than erode their rights and undermine collective power. First, by ensuring the collection and use of data at work and the development and application of digital technologies within the workplace is determined by collective bargaining agreement. Second, by establishing sectoral 'data trusts' to provide workers and trade unions with the information needed to bargain and organise more effectively. And finally, by developing democratic and universal digital infrastructures, including the scaling of co-operative and worker-owned platforms, that enhance the ability of workers to organise for better terms, conditions and pay.
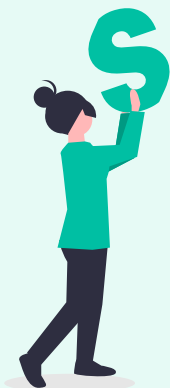
— Securing worker rights: an emergency response

As part of a package of emergency Covid-19 recovery legislation, a comprehensive new set of labour rights should be introduced. This should include specific measures to guarantee rights and securities to platform workers as well as steps to rebalance power at work more broadly to ensure we emerge from the crisis with a fairer, more secure, and equitable world of work. As the TUC and the Institute of Employment Rights[38] among others have argued for, this should include:

- **The creation of a new 'worker' definition** to cover all existing employees and workers, including agency workers, dependent contractors, and people on zero-hours contracts, helping end bogus self-employment and raising the floor for all, regardless of status.[39] All workers should benefit from a guaranteed, strong set of rights from day one. These should include statutory redundancy pay, family-friendly rights including maternity, paternity and adoption leave, holiday pay, protection from unfair dismissal, a clear setting out of their pay and conditions including hours, the payment for breaks during shifts, and union rights.
- As the TUC set out in their response to the Taylor Review, there should be a **statutory presumption that all individuals qualify as employees** unless the employer can demonstrate in an employment tribunal that they are genuinely self-employed.[40]
- **An end to zero-hours contracts**, replaced with contracts that provide a minimum number of guaranteed hours and have a premium rate for overtime.
- A new duty to provide **harassment-free workplaces** and the inclusion of socio-economic status in protected characteristics.

- Stronger and more equitable **family-friendly rights**, including two month paternity leave on full pay and three months leave to be shared flexibly between parents or carers, for when the child is slightly older; the right to request flexible working to enable people to better balance work and family life; and stronger protections against unfair dismissal for all workers; statutory bereavement leave;
- **Tribunal fees should be abolished** so that all workers can enforce their rights and help rebalance power at work. Agencies enforcing worker rights should be properly resourced and support all workers, including undocumented workers.
- The successful **sectoral licensing** approach of the Gangmasters Labour Abuse Authority (GLAA) should be extended to types of occupation that suffer from high levels of exploitation and insecurity, including key sections of the platform economy.
- Employers should be required to devise and implement, with the input of the workforce, plans to **eradicate pay gaps** based on gender, race, and/or disability, with fines for those who have not eradicated such pay inequalities.

Alongside new rights, action is needed to reform the legal framework which governs trade union rights, which as the Institute for Employment Rights have found, "are the most restrictive in the Western World. This is indisputable in relation to the right to trade union autonomy, right to strike, and the right to bargain collectively." [41] As a result, collective bargaining coverage in the UK has collapsed, covering just 14.7% of workers in the private sector and only 26% of workers overall.[42] To address this, a new framework to expand collective bargaining at both a sectoral and enterprise should be introduced that will improve working conditions and pay, reduce wage inequality, support good employers, improve productivity,

and strengthen workplace democracy. Strengthening collective bargaining – at both a sectoral and enterprise level – is vital in a changing world of work. It will enable both workers and companies to adapt to new forms of work. It would ensure the collective voice of workers shapes the design of company strategies, particularly those that relate to the deployment of new technologies and ensure the gains of new technologies are fairly shared among capital and labour.

- Giving **trade unions right of entry** to organise, recruit and represent their members in the workplace – and across multisite organisations – to accelerate the recent uptick in union membership. This should include a 'digital right of access' to enable unions to communicate with workers electronically, including organising platform workers. Union representatives should have the right to facility time (paid time off) for union work, including organising, recruiting, and representing members.
- The **threshold for union recognition in a workplace should be lowered** to 10% union membership and evidence of majority support through signatures or a card check.
- **Prohibit union-busting** and repeal the 2016 Trade Union Act, which makes collective bargaining more difficult.
- Re-establish **sectoral collective bargaining** with bargaining to cover pay and conditions, working time and holidays, dispute settlement, job security, health and safety, gender equality, workplace equalities relating to ethnicity, class and other protected characteristics, pensions, and training and development.[43] A new Sectoral Employment Commission (SEC), which can identify categories of work and initiate negotiations between the two sides of industry over the baseline terms and conditions of the sector for

all workers and employers within the industry, should be created. Sector negotiating bodies should include an equal number of employers and trade union representatives. Sectoral bargaining should be rolled out in key sectors of the everyday economy to begin, including care, hospitality, retail, manufacturing, agriculture, telecommunications, and transport and logistics. Where sectors are primarily overseen by devolved administrations, sectoral bargaining should be organised on the same scale. Sectoral bargaining mechanisms in these sectors should also cover work organised through platforms.

- As part of a renewal of collective bargaining, **The Advisory, Conciliation and Arbitration Service (Acas)' duty to promote collective bargaining should be restored** and public procurement rules should favour contracts that use negotiated terms and conditions.[44]

- Sectoral bargaining should also be mandated to negotiate **reductions in working time without loss of pay**, ensuring the benefits of increases in productivity are fairly shared.

- Alongside sectoral bargaining, **a revival of enterprise level bargaining** is needed, focusing on how day to day practices are organised at work as well as specific contractual terms and conditions, which it is important workers have a collective ability to influence, over and above the high base-line of terms, conditions and equitable wage growth established by sectoral bargaining.

- Existing **information and consultation rights** should be expanded and consolidated into a new system of elected work councils which would have binding rights on workplace matters, including health and safety, negotiating economic and managerial change, working time and breaks.

— Guaranteeing economic security: providing a minimum income for all

The UK's social security system is weak by international and historical comparison. As Alfie Stirling and Sarah Arnold argue "total out-of-work payments received by UK employees are on average around 34% of their previous in-work income – the third lowest among 35 OECD advanced economies. And at 15% of average earnings, the main adult unemployment payment is worth less than at any time since the 1948 creation of the welfare state."[45] In the midst of the deepest recession in 300 years, it is inadequate as a safety net and cannot provide the countervailing security that empowers people to only accept good, well-paid forms of work.

To address this, we therefore support calls for a temporary and generous minimum income guarantee that would put in place a "comprehensive, sufficient, non-conditional, non-means tested at the point of access, minimum income floor to catch everyone who is currently missed out by the job retention scheme and the self-employed income support scheme."[46] As set out by NEF this should build on the current social security system, based on the following pillars:

- **Value**: Every working age adult who is not covered by either the job retention scheme or the self-employed income support scheme will be entitled to a weekly payment worth £221 per week.
- **Administration:** All working age adults would be entitled Existing claimants would experience an automatic top-up to their current benefits; new claimants will receive payment through the advance payment system for UC.

- **Entitlement:** All working age adults who are eligible should be able to apply.
- **Cost:** modelling from NEF suggests that an emergency minimum income guarantee scheme over three months would cost around £20 billion, funded by government borrowing.[47]

The proposed design is a temporary, debt-funded response to the economic emergency, but a permanent minimum income guarantee programme – funded out of general taxation – would be a powerful alternative to the UK's current and inadequate social security system, one that would reduce poverty and inequality and improve economic security, striking at a key power imbalance that shapes the UK's labour market.

Alongside this, though beyond the scope of this paper, we support the extension of the universal basic services agenda that would progressively decommodify the building blocks of modern life, from broadband to transport, housing to food. This will require making and winning the case for a more progressive tax system and a new arrangement of ownership and control of foundational goods and services.

— Democratising the firm: reallocating coordination rights

Work is shaped by how economic economic coordination rights are allocated and to whom, determining who has the authority to manage and decide. Today, economic co-ordination is primarily organised through the capitalist firm with co-ordination rights allocated on the basis of ownership of capital and where the purpose of activity is to maximise shareholder wealth. This is a sharply hierarchical, concentrated approach, with capital monopolising decision-making power. Economic coordination rights in the

corporation are assigned exclusively to capital through shareholding; labour and other non-property holding stakeholders are excluded from the government of the company. Meanwhile the ability of workers to co-ordinate through trade unions and collective bargaining is limited and subject to legal and political pressure. In other words, property-holders are free to associate, combine, and coordinate; workers' freedom to do the same is sharply circumscribed. That organised capital is granted extensive co-ordination rights relative to organised labour underpins the sharp asymmetries of power at work that structures the terms and conditions of employment and underpins wider inequalities of wealth and authority in the economy.

This is by design. Capitalism, as the labour law scholar Sanjukta Paul argues, is a mechanism for narrowly concentrating economic co-ordination among the owners and agents of capital.[48] The alternative must challenge this concentration of power and control by reallocating and democratising economic coordination rights, both at the firm and economy-wide level.

The platform economy exacerbates these trends. Platforms erode the traditional employment relationship, shifting insecurity and risk onto the worker and eroding the protections and rights of the employment relationship. At the same time, even as platform companies coordinate entire markets, setting the terms, conditions and prices of work, the ability of platform workers to organise is heavily restricted. 'Big Tech' - and other large companies - are legally privileged to co-ordinate on a vast scale, while the ability of workers to coordinate, both within firms and across sectors, is limited and narrow. This is not because of the technologies but rather the assemblage of laws and regulations that concentrate economic co-ordination rights overwhelmingly with the platform companies. As Paul argues,

...[O]wners/investors do not just benefit from combining the economic power of their capital. In markets where there is a price premium to be realized from coordination, they also benefit from combining the power of others' labor. They coordinate the prices of services others perform, through the mechanism of the firm (and thereby realize any premium), while the service-providers themselves, if they are not employees, are barred by antitrust law from benefiting from the economic power of their own combination.[49]

A central task in transforming work is therefore reallocating economic co-ordination rights within the firm and beyond, institutionalising alternative forms of economic association and control, scaling a more pluralistic landscape of genuinely inclusive, democratic and purposeful enterprise. This requires an act of unmasking. Too often the existing distribution of rights and powers within the firm is cast as a fixed, natural state, pre-existing politics. Yet the monopolisation of co-ordination rights by capital is not "natural" but constituted by law and politics. The corporation is not a Hayekian institution of 'spontaneous ordering', a space of private contract and property whose actions should be insulated entirely from democratic intervention, but rather one undergirded and made possible by public power, its rights and powers publicly granted, legally defined, and re-codable.

If coordination rights that structure all economic activity are publicly granted, allocated and sustained through law and public action, a form of privilege and social franchise, then it is possible to reimagine their allocation, constructing very different types of enterprise, governed by different logics, supporting different forms of work. The goal, then, is to reclaim enterprise as

a social and generative institution of the commons: purposeful and democratically governed, where all its stakeholders have stake and a say, with workers having participation rights based on the reallocation and democratisation of coordination. To that end, the following measures are required to reallocate and democratise economic coordination rights within the company. The following should apply to all enterprises regardless of legal form, size, across corporate groups, including foreign entities with their real seat in the UK:

- To **reshape company purpose and end shareholder primacy**, Section 172 of the Companies Act 2006 should be amended to make the promotion of the long-term success of a company for the benefit of its key stakeholders, including employees, the primary duty of its directors, not the maximisation of shareholder interest.
- To **democratise corporate governance**, 45% of a company board should be elected by the workforce, 45% by the shareholder body, with the remainder representing social and environmental interests.
- To **extend the economic franchise to workers**, workers as a collective should be entitled to a minimum of 25% of the total voting rights in their company and have the right to be registered as a member of their company.
- To **give workers a share in the profits they help create**, mandatory profit sharing for workers in companies above 50 employees should be introduced, as in France.
- To **democratise capital markets**, there should be codetermination in capital and pension funds, with a prohibition on asset managers voting without instruction.

— **The collection and use of data at work and the development and application of digital technologies within**

the workplace should be determined by collective bargaining agreements

In addition to negotiating wages and conditions, all collective bargaining agreements (both sectoral or enterprise-based) should be required to negotiate over the collection and use of data during work as well as the adoption and use of technologies that impact the experience of work.

The goal of including the use of digital technologies in collective bargaining agreements is to allow workers to shape the development and application of technologies which intimately pattern how they work as well as shaping the distribution of power between workforce and management. Without this countervailing force, technologies are likely to amplify existing inequalities in pay and conditions and weaken the protections afforded by the employment relationship. Collective bargaining agreements should include the following:

- **The right to have full transparency in AI systems** and how they intervene to shape working practices through the adoption of an algorithmic "black box". This would be a device that records information about how AI and data-systems work and record all decisions (and decision-making trees). This data should be easily accessible, understandable, and uncomplicated, enabling workers to quickly understand how technical systems operate and their effects on working conditions.[50]
- **The right for workers to collectively determine how data collecting technologies are introduced**, including a final say on the introduction and use of surveillance and monitoring technologies, and ensure workers can co-determine the development and deployment of AI

systems.

- **The right to co-design algorithmic systems** that form decision-making processes and impact on working conditions, including ensuring algorithmic accountability.[51]
- **The right to access and use data** generated by workers to improve working conditions, including protecting "time sovereignty" – the ability to exercise control and balance over one's own work time – and the use of data to strengthen the hand of the workforce during collective bargaining negotiations.[52]
- **The right to a "human-in-command"** approach, whereby workers can determine how legal control and responsibility over machines is exercised, including a right of explanation over machine-based decision-making processes.
- **The "right to disconnect"**, based on the French model where a series of sectoral bargaining agreements have ensured workers are not required to send or answer emails outside of work hours, should be included in negotiations.
- **The right to ban certain forms of data collecting** or analysis when it infringes on the privacy, rights, or wellbeing of the workforce.

Collective bargaining agreements must extend to those whose work is organised through digital platforms; these workers should also be recognised as employees. There is ample precedent for this. For example, in both Norway and Denmark, Deliveroo workers are covered by collective bargaining agreements.[53]

Legislation to embed sectoral collective bargaining – including over the development and use of technologies and technical systems – should be accompanied by a review of employment law, integrating a new set of principles into the ethical use of AI and machine technologies into legislation. At an international level, the

UK should lobby for a new International Labour Organization (ILO) instrument setting out minimum rights and protections for platform workers internationally. This should be ambitious; as a minimum, it should mandate that platform workers in the UK and globally enjoy the rights set out in the ILO Declaration on Fundamental Principles and Rights at Work. One analogy would be the Maritime Labour Convention, a global labour code for seafarers which helps guarantee decent conditions for workers who work across borders.

— Establish sectoral 'data trusts' to provide workers and trade unions with the information needed to bargain and organise more effectively

The asymmetry in information between workers and employers – heightened by inequalities in access to data and the insights it generates – further cements power imbalances at work. To address this, relevant sets of data should be made accessible to workers and trade unions, at both the enterprise and sectoral level. By providing them with a better view of both individual and aggregate earnings, conditions and employment status, the pooling of data can enable workers to better understand their work and conditions and help unions better organise, campaign, enforce existing rights, and collectively bargain. As Worker Info Exchange argues, it can help workers in the platform economy gain employee status recognition or enable trade unions to use information as leverage for collective bargaining to improve pay and conditions.[54]

To that end, sectoral data trusts should be established as part of the sectoral collective bargaining process, with the aim of creating an expanding data commons. One example of such an effort would be to establish data trusts – an autonomous legal body that acts as a custodian and steward of a specific data set,[55] making sure that the data is shared safely and democratically.[56] A

Data Trust could help build the policy foundations for a process of data commoning – guaranteeing that collective data is anonymised, decommodified and working towards public interests, rather than serving the shareholders of platform monopolies.[57]

As part of sectoral collective bargaining agreements, companies should be required to provide to the sector data trust a set of agreed datasets, such as wages, conditions, and employment status of the workforce, suitably anonymised with respect to privacy. Trade unions, individual workers, and civil society organisations would be able to request access to the data from the data trust. The trust should provide analytical support to help users analyse the data, generating insights that can help them intervene more effectively in the workplace.

The Open Data Institute has recently set out – based on three pilots – recommended best practice for how trusts could be established, governed, and populated with relevant data; these should inform how sectoral data trusts are established, their governance, and what forms of data are required and the terms of access and use.[58] These principles should be drawn upon in the design and operation of sectoral data trusts.

In addition to the sectoral data trusts, the 2018 EU General Data Protection Regulation, enacted through national legislation in the UK, gives individuals significant powers to demand access to all of their personal data at work, as well as fairness and transparency in how their data is processed. However, to make these rights effective, support should be given to organisations helping individuals and groups enforce their data rights. To this end, a "Democratising Data Fund" should be created to help workers and civil society gain access to and better use data collected at work to improve pay and conditions.

— Building a democratic and universal digital infrastructure

A new landscape of data trusts that protect privacy while enhancing the ability of workers to coordinate and bargain should be underpinned by a 21st century digital infrastructure that is democratic and universal. Delivering that will require moving beyond the "regulatory state" and market-oriented approaches that have dominated the development of the UK's digital infrastructure in recent decades – and which have led to the slow roll-out of vital infrastructures like full fibre broadband, a deep digital divide, and sharp imbalances in power that benefit the owners of digital platforms at the expense of labour. Instead, a new set of institutional arrangements based on the democratic ownership and governance of digital, data and knowledge infrastructures is required to lay the foundations for a thriving society and democratic economy.

A democratic 21st century digital infrastructure – developed to meet the needs of people and planet – can open up a more innovative future that better serves workers and society, from the creation of national data funds and collective data banks to intervening around algorithmic systems; from reshaping platform work to socialising "feedback infrastructures"; to exploring how data infrastructure can be remade as sites of participation around both local and national issues. Reshaping the UK's infrastructure – digital and physical – can drive wider changes in social, economic and ecological relations, changing the purpose of connectivity – challenging exploitative platforms and algorithms and supporting alternative ways to use digital technologies that are pro-labour.

Public policy should therefore seek to reshape how digital infrastructure is deployed and owned, as well as how data is produced and distributed, moving from conditions of private

enclosure to a data commons. As Common Wealth have argued in *Full Fibre Future* and *Democratic Digital Infrastructure*, organising digital infrastructure – the rollout and maintenance of fibre optic connection and 5G in particular – should be a vital 21st century public infrastructure.[59] To that end, the following is recommended:

1. A **new public infrastructure company** should be tasked with rolling out a nationwide full fibre network by 2030 – delivering a digital network faster, cheaper, and more equitably than by private competition, and undercutting the incentive for network providers to support harmful forms of surveillance technologies.

2. A **publicly owned cloud service option** should be examined, operating as an alternative to existing providers with an emphasis on data security and the ethical use of information.

3. The development of **a digital industrial strategy** – with public investment and organised labour at its heart – to develop democratic technological sovereignty, including:

   • The introduction of **documented open standards** to ensure interoperability and inhibit the development of IP monopolies.
   • A new **open software license regime** for technical developments funded by public money.
   • **Scaling alternative business models** to democratise economic structures, such as platform cooperatives co-owned by workers and users.

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