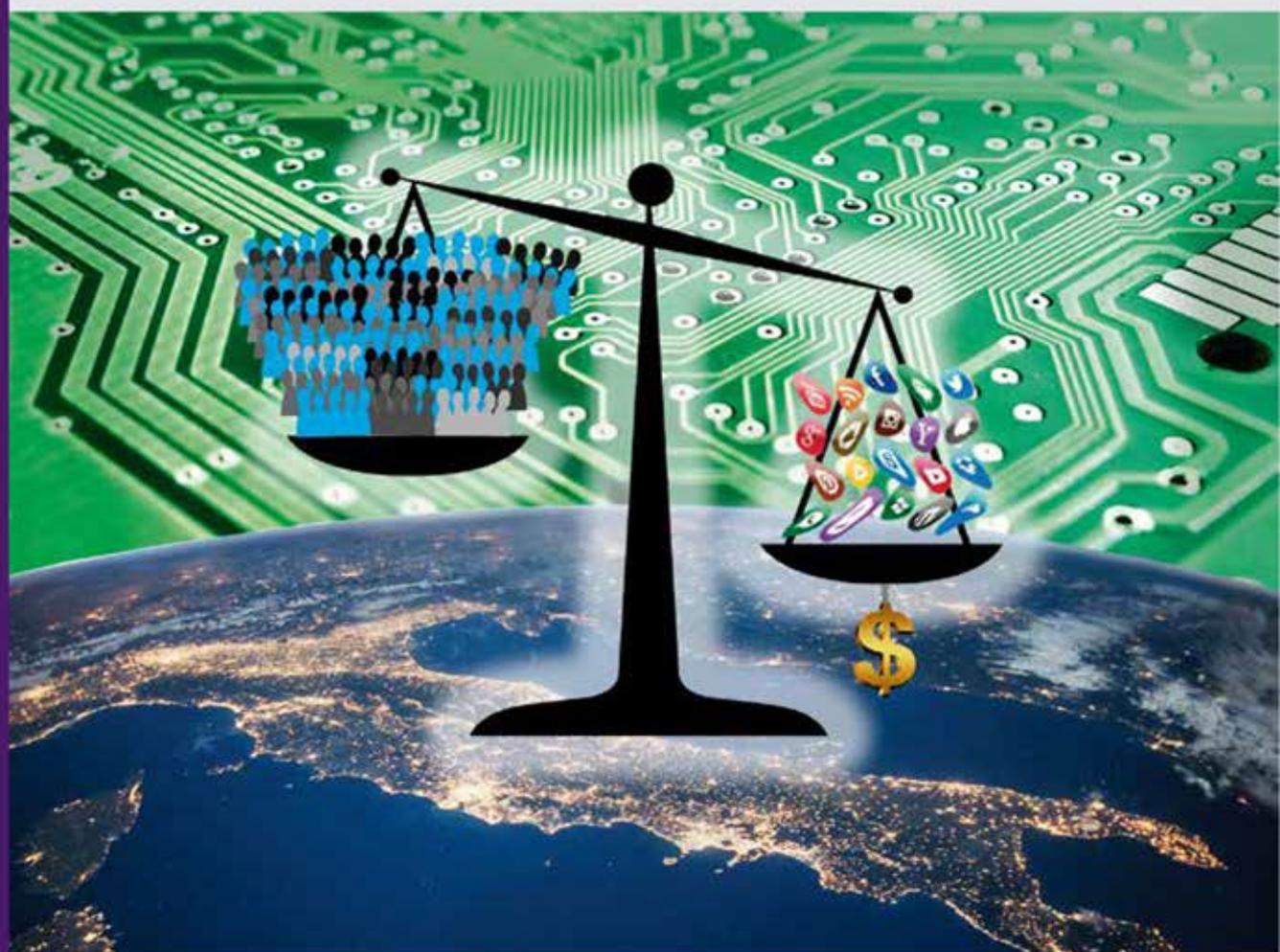


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Social justice in a digitalized world



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Social justice in a digitalized world

- 1 Towards digital justice
Sally Burch
- 3 Global capital, digital monopolies and new
forms of enclosure
Prabir Purkayastha
- 8 Big tech seeks to cement digital colonialism
through the WTO
Deborah James
- 13 Humanizing the digital justice debate
Gita Sen
- 16 The digitalization of work and its
consequences for the Global South
Cédric Leterme
- 19 Digital public services
Kate Lappin
- 22 Digital technology in the education sector
Gurumurthy Kasinathan
- 26 From Terminator to Exterminator
Neth Daño, Jim Thomas y Tom Wakeford

Towards digital justice

Sally Burch

The speed of penetration and ubiquitous reach of digital technologies in society is unprecedented. Such numerous and varied applications, many of which are extremely useful or simply captivating, in just a few years have become almost indispensable, sometimes even addictive, which has led to their widespread though uncritical usage.

This came about largely due to the establishment, early in this century, of a dominant internet business model based on appropriating and monetizing data, which motivated huge investments in the sector, with the potential for colossal profits. Although it did contribute to mass access, it was at the cost of subjecting the user population to a growing dependence on the big digital monopolies, even in some of the most intimate aspects of their lives. Today, the great majority of interactions that are carried out with digital support go through the platforms controlled by one or another of these monopolies, whose names are already household words: Google, Facebook, Amazon...

Taking advantage of the absence of regulation and the inaction of legislative bodies and authorities, these companies have been able to exploit, without restriction, a practically free and unlimited input: digitally generated data. With this input, by means of algorithms (programs that analyze and order the data), they create profiles of their users that they then sell, mainly to advertisers. Targeted advertising according to the profile of each user gives them an advantage over traditional media, a fact which has enabled them to dominate the advertising market. A recent study estimates that in 2018, in advertising in news sources alone, Google has invoiced US\$ 4.7 billion, equivalent to 81% of the advertising income

of the U.S. media industry in the same year¹.

Data are also the input for an infinite number of new applications of artificial intelligence (that is, algorithms with learning capacity and predictive analysis²). These are used for surveillance and security purposes, for governance functions (such as taxation or traffic management), for transforming productive processes (automation, robotics, productivity control of each worker); for trade and services (such as Amazon, Uber); for political-electoral campaigns, health diagnostics, new lethal weapons and a long etcetera. Meanwhile, digital technology is being integrated with other areas of technological transformation, such as genetics or climate engineering, and contributes to accelerating its development.

Many of these uses have obvious benefits for users and society, hence their wide acceptance. However, we are also seeing new evidence of shady, non-transparent, manipulative uses; cases of massive abuse of privacy, of false information becoming viral, against which the population is largely unprotected. However, beyond whether usages are beneficial or harmful, a fundamental problem is how current technological development allows private companies to extend their tentacles to areas that were previously public or common goods, which, particularly in the case of digital megacorporations, has unleashed a process of monopolization on an unprecedented scale.

Yet all of this is still small-scale in comparison with what is to come. A race is underway to

1 <https://bit.ly/2wNuAUn>

2 Predictive analysis uses historical data to predict future events; a method with obvious limitations and the risk of reinforcing biases already present in society.

digitalize more and more areas of the economy and society, to introduce the internet of things (IoT), 5G connectivity (the technological basis for IoT) and to fine-tune artificial intelligence to span more and more areas. Whoever dominates the digital economy will largely dominate the economy itself. Even more seriously, without proper measures of regulation and control of these corporations, we are on our way to societies under constant surveillance in all spheres, both public and private, facilitated by an infinite number of cameras, microphones, sensors, antennas and other intelligent devices, intercommunicated with each other and with the owners of the technology, by means of opaque algorithms. If we continue along this path, democracy itself is in danger.

This is also the context of the present face-off, mainly between the United States and China, to achieve dominance in digital technology, because whoever prevails will set the standards and gain an advantage in the market. On the one hand, both China and Russia have opted to create their own internal internet (based on a model similar to Silicon Valley), largely to block the dangers of US surveillance and intrusion or an eventual cyberwar, though also for their own surveillance purposes. On the other hand, China, in particular, is investing heavily in e-commerce and artificial intelligence and the new 5G technology, with which it has gone out to conquer world markets. The backdrop to the current US-China trade and tariff war is Chinese superiority in 5G technology, which explains the US response to try to block the advance of the Huawei corporation³.

Visions in dispute

This evolution was not - and is still not - inevitable. The internet still has a significant component of citizen initiative and innovation, which generates spaces of freedom, horizontality, distributed and decentralized technology. With greater public investment and regulations aimed at defending the pub-

lic interest, with greater citizen control, the dispute between this citizen-based vision and the business vision could achieve a better balance. However, in the current phase of predominance of neoliberal capitalism and financial power, this does indeed seem unlikely.

Now, belatedly, several governments and legislatures are realizing that a monster has been created and are trying to curb it. It will not be easy, given the enormous power of digital corporations, and it is essential to have widespread and active citizen participation in the conception and development of solutions; otherwise, these could end up being worse than the problem they aim to solve. The new European regulation on data protection is an interesting step in this direction, and it is significant that most Latin American countries are following this model for their own legislation on the matter (even if it is mainly to facilitate trade with Europe). The Internet Civic Framework (Marco Civil de Internet⁴) that Brazil adopted in 2014, with citizen input, is also considered paradigmatic in terms of internet rights.

Against this backdrop, it is urgent to identify the challenges to social justice in hyper-digitalised societies, especially now that the corporate model is predominant. Its implications cover all areas, such as employment, agriculture, health, education, science, the media, democratic life, among others. This agenda needs to be inter-sectoral, with participation of the different actors involved.

This edition explores several aspects of this challenge. The reflections that follow gather and develop elements that were presented and exchanged at the Workshop on “Equity and social justice in a digital world: An inter-sectoral dialogue for a digital justice agenda” (Bangkok, 25-27 March 2019), convened by the Just Net Coalition⁵, Our World is Not for Sale (OWINFS) and Focus on the Global South. ☞

3 <https://www.alainet.org/es/articulo/198839>

4 <https://www.alainet.org/es/active/73027>

5 For further information: www.justnetcoalition.org, info@justnetcoalition.org

Global capital, digital monopolies and new forms of enclosure

Prabir Purkayastha

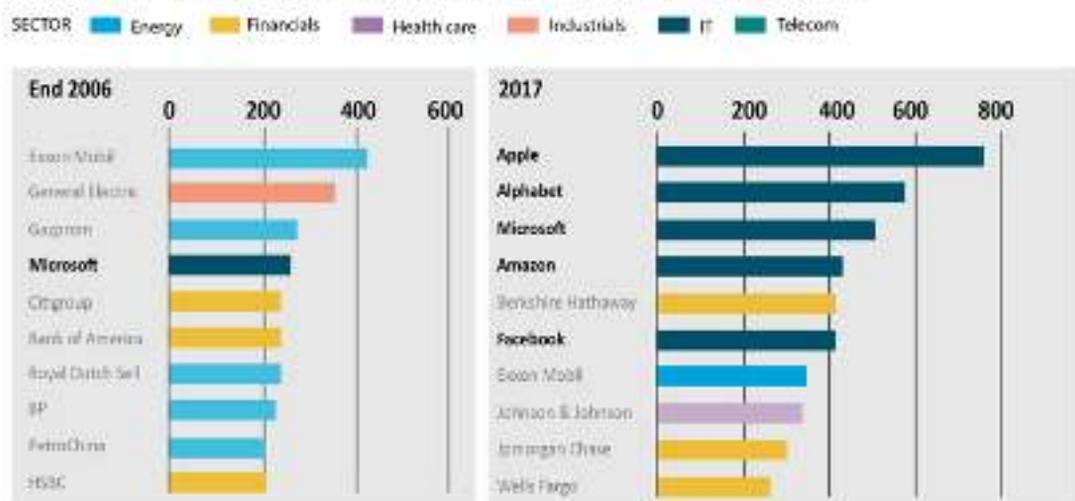
The beginning of the digital age and the neoliberal economic model has been roughly coterminous - both came of age in the 90s. While the neoliberal economic model seems to be in a crisis, the digital monopolies show no sign of flagging. On the contrary, along with the continued expansion of older players, we are witnessing the rise of many new ones. It is clear that unlike the “financialisation” core of the new neoliberal model, the digital monopolies are not only not running out of steam, but also invading more and more areas of production, distribution and circulation of material goods.

The chart above shows the impact of these technological changes: the new digital mo-

nopoles have overtaken the older oil, automobile and financial monopolies in just two decades. What is striking about this change is the pace at which this has happened. While the US companies are the world’s biggest digital monopolies today, the Chinese companies are not very far behind.

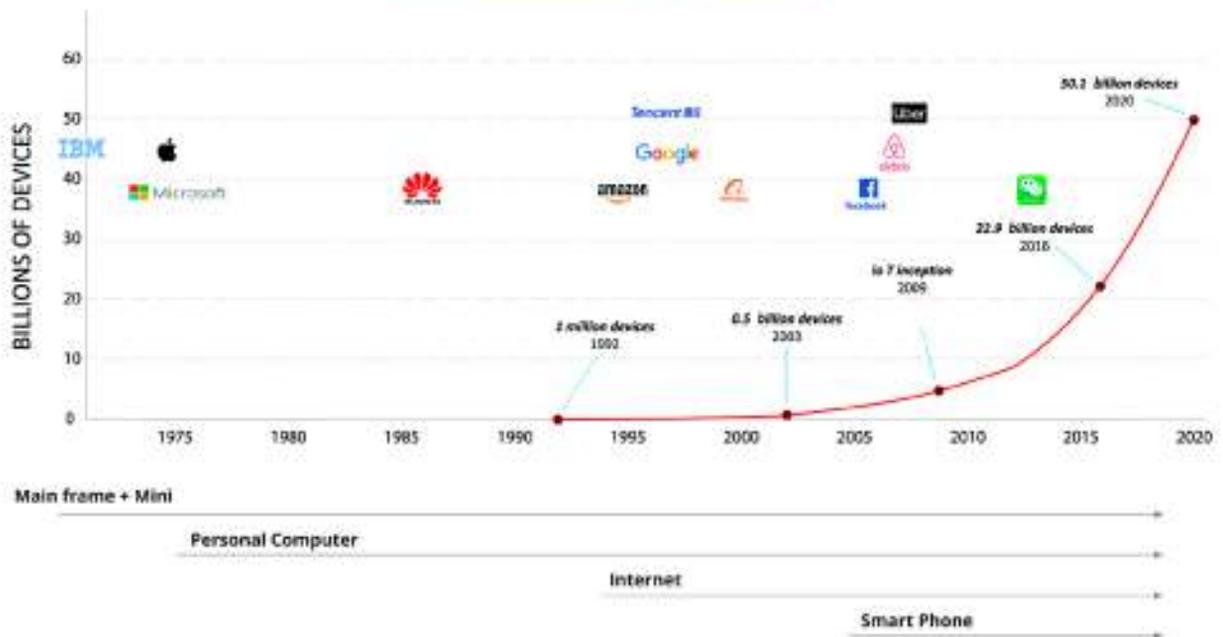
If we look at the changes underlying the explosive growth of these digital monopolies, we see two major technology drivers: one, the internet, which caused a manifold increase in the connectivity of devices, and the other, the increase in computational speeds of the connected devices. Both these - the growth of connectivity and the increase of computational speeds - show no sign of flagging. Earlier,

World's largest listed corporations by market capitalisation (In billion dollar)



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Connected Devices on Internet



the connected devices were only main frames and mini computers, later, also personal computers. Today smart phones, and with the Internet of Things (IoT) smart devices, connect to the internet.

Both the rise of data transmission and computational speeds are based on what are called power laws. Computational speeds double roughly every 18 months, and connectivity doubles at a slightly slower rate.

More than monetizing data

Most people, including us in the left, have attempted to explain the rise of digital monopolies in terms of data as the new oil paradigm, popularised by the World Economic Forum. This focusses on the meteoric rise of Google and Facebook, and the use of personal data to fuel their rise. However, the rise of social media giants based on collecting peoples' personal data does not explain the continued expansion of older companies such as Apple, Microsoft, and Amazon, or the rise of newer monopolies such as Uber and Airbnb. Clearly, there is more to the digital story than simply

monetising personal data.

A different way of looking at digital monopolies would be to see what is new in their operations. The first set of companies - Microsoft and Apple - that emerged in the late 70s and became big in the 80s are still among the top ten companies today. They were based on different forms of intellectual property - Microsoft of software and Apple of hardware. The next set comprises social media platforms such as Google and Facebook. Their business model is based on advertising, selling their users to the advertisers - a fairly straightforward media model. The latest monopolies to emerge are platforms monopolies in what is called the "sharing economy". An early forerunner of these is Amazon, which built a platform on which others could trade as a marketplace, with, of course, the platform taking the biggest cut.

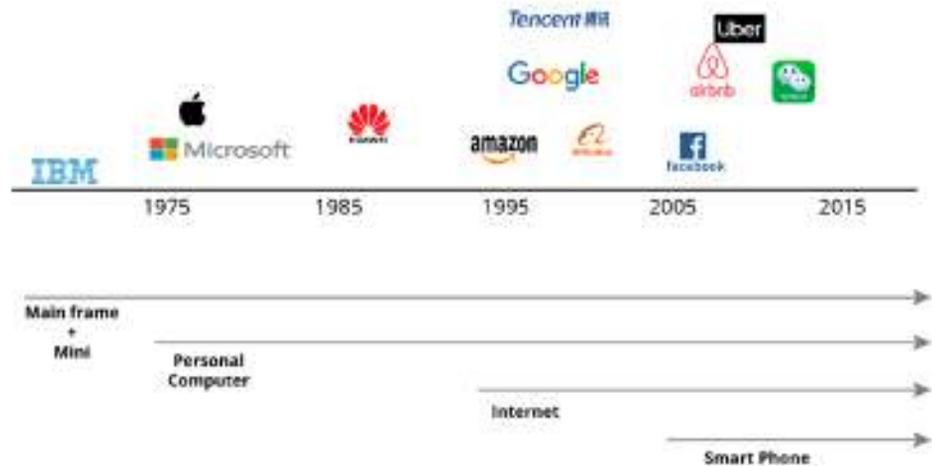
The charts here show the rise of connectivity and the various technological changes that have taken place. Before the rise of the internet, we had the main frame computers and the PCs. IBM, the big player in main frames, believed that hardware had value and software

was simply to be bundled with the hardware but by itself was not a commodity. The personal computers or PCs created a market for software itself to be a commodity. Microsoft became the key player in the software market, with DOS, later Windows, as the monopoly supplier of the operating system of the PCs. With this monopoly, they also built a software monopoly over products that ran on their operating system: word processing, spreadsheets, databases, etc.

Both these monopolies - of IBM over main frames and Microsoft's over software for PCs - depended on what the bourgeoisie call intellectual property. Intellectual property - copyright over proprietary software, hardware and design patents - underpin the monopoly of Microsoft or Apple. It is still the old-fashioned monopoly that, for example, a pharmaceutical company or Disney exercises. This is what the commons movement has termed as the enclosure of the "intangible commons of the mind"¹, or enclosure of human knowledge that should not be converted into private property.

Since then, with TRIPs/WTO agreements, the intellectual property regime has only strengthened. Apple and Google have [sued](#) their [competitors](#) for "theft" of intellectual property. To believe that digital monopolies have been built on a different model of capitalism misses the point that capital will use whatever it needs to create monopoly and extract surplus,

1 James Boyle and others have compared the enclosure of all forms of knowledge - patents or copyright - as similar to the enclosure of common lands in the UK.



not just directly from labour, but also as monopoly rent from others.

Apple has the unique distinction of becoming the biggest manufacturer of smart phones and PCs without a single manufacturing plant. Foxconn, the company that manufactures the actual Apple products, gets a tiny fraction of what Apple receives. It has to invest in factories, carry inventory and pay the salaries of its workers. Apple's monopoly is built on its monopoly brand and designs, and control over the entire supply chain.

The advertising model

The communication monopolies of the 19th and 20th centuries, starting with the newspapers and later, radio and television, were all based on the broadcast model, and held their monopoly by owning the means of communications: printing presses, radio and television broadcasting equipment. The model of communication for the internet is a decentralised model, with its origins in the US Defence Department's Arpanet, and later its expansion. But its fundamental character of not having a centralised architecture still remains.² Initially, the internet was used by the scientific community to ex-

2 Prabir Purkayastha and Rishab Bailey, U.S. Control of the Internet, Problems Facing the Movement to International Governance, Monthly Review, July-August 2014, <https://monthlyreview.org/2014/07/01/u-s-control-of-the-internet/>

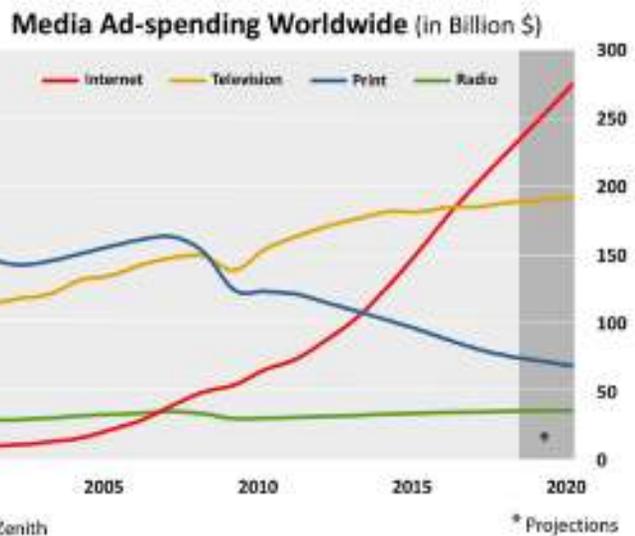
change information with each other and exchange technical papers. To this was added the specific form of addressing of such sites: hypertext web pages and web links, creating the now familiar World Wide Web.

The problem with the decentralised net came out of the huge expansion in the number of content providers and websites: there was just too much content on the web, and very little information on how to reach them. This is where search engines came in. Initially, there were a large number of search engines, but Google won the race and emerged as the leading search engine. It is this dominance over the search engine market that allowed Google to create its other tools - Gmail, Google Docs - all of which are given “free” to the users. In lieu, Google accesses our personal information, and offers us to advertisers as commodity³. The creation of users as audience commodity is the consequence of these companies enclosing our data, and converting it to audience demographics⁴ to sell what is known as targeted advertising. Google’s virtual monopoly over the search engine made it the market leader for garnering digital advertising revenue. This monopoly has now been extended by its acquisition of YouTube, the video streaming platform, and Android, the operating system that drives the bulk of our mobiles.

Facebook, the other major monopoly in the digital platform market, chose a different route. It created a space where people could put up content about themselves, and connect to their friends or relatives. Today, Facebook has 2.27 billion active users, making it the biggest social media network. It has also

3 Dallas Smythe, Communications: Blindspot of Western Marxism, Canadian Journal of Political and Social Theory, Vol. 1, No. 3, 1977

4 Demographics refers to dicing up the audience with certain common characteristics so that they can be targeted as a group for messaging/ads, then sold to advertisers.



acquired the messaging platform, WhatsApp, and Instagram, a picture and video-sharing social network. This allows Facebook to create our profiles from who our friends are, what we like, or what we read or write. These profiles are used to generate audience demographics, which then can be sold to advertisers as audience commodity.

WeChat and Weibo are social media platforms in China, while Baidu is the Chinese search engine. These also have similar business models as the US based social media monopolies.

The chart of media ad spending shows how digital ad revenue is slated to overtake all other forms of ad revenue combined in the near future. Google and Facebook are increasingly taking over the advertising space from other media companies. The bulk of their revenues comes from selling targeted advertising, which has a higher rate of conversion than the ads that the traditional media companies carry. There is a bigger bang for the buck for advertisers using targeted advertising.

The enclosure of data

While World Economic Forum extolls the new, inexhaustible resource called data, the reality is that creating audience demographics out of user data is, economically, a new form of

enclosure. Earlier, personal data was not a commodity. It is enclosing this data - including the data of people's social interactions, and processing it into audience demographics - that converts data into commodity. While intellectual property as an enclosure of the commons has been widely discussed, particularly in the environmental and free software movements, the enclosure of data commons has received much less attention. Even those arguing against enclosure of user data tend to focus on how it can be monetised by the users, rather than looking at it as a part of the commons that cannot be privatised either by companies or individuals.

Some mistake the advertising model as the only model for digital monopolies. As we have shown, Microsoft and Apple, digital monopolies based on intellectual property, continue to flourish and figure in the top 5 global companies by market capitalisation.

The enclosure of personal property

Is there a third model that digital monopolies are adopting? For example, how do we look at Uber, Didi and Airbnb? Or the new food apps? Evgeny Morozov shows⁵ how the new platform monopolies that are now being created use the help of venture/finance capital, the same ones that helped Google, Amazon and Facebook build their monopolies. Their business model helps these platforms to enclose the informal sphere of the economy. Uber and Airbnb convert individual vehicle and house owners to what they believe as independent contractors, but in reality are glorified serfs! The sharing economy is the enclosure of personal property by digital monopolies and creating new forms of casual labour.

Amazon occupies a special place in this scheme. It started as a combination of digital equiva-

⁵ Evgeny Morozov, From Airbnb to city bikes, the 'sharing economy' has been seized by big money, Guardian, November 27, 2018 <https://www.theguardian.com/commentisfree/2018/nov/27/airbnb-city-bikes-sharing-economy-big-money>

lent of brick and mortar shopping chains/supermarkets. Unlike the traditional chains such as Walmart, it not only holds inventories in its warehouses, but also sells goods that it does not store. The inventory of such goods is held by either the producers or the distributors. Alibaba operates on a very similar model. It is possible to think of these monopolies as creating platforms that enclose shops owners and distributors warehouses. Or as double-sided monopolies, a monopoly to their suppliers and monopoly to their buyers, similar to Walmart. The economies of scale ensure that Amazon can make monopoly profits on both sides, the way Walmart did or still does.

It will be wrong to think that the growth of digital monopolies will taper off as the existing areas of their operation get saturated. This view misses out the fact that digital monopolies are now branching out into newer areas. Will the existing car manufacturers then become the Foxconn of the automobile industry as Google maps and autonomous vehicle software take over the car market? Will most factories shut down to make way for new ones with 3-D printing and flexible manufacturing? Will it create new monopolies over knowledge and design that will replace older monopolies based on manufacturing infrastructure?

As long as internet connectivity and processor speeds increase, the expansion of the digital monopolies will continue, with newer and newer areas of the economy coming under their control and disrupting existing business. The future of capital lies in the ability of capital to finance new digital monopolies. It is the relationship between finance capital and the new digital monopolies that we need to examine. The knowledge economy, social media, sharing economy - all these are different faces of contemporary capitalism. This is the task before us today: understand digital monopolies so that we can fight them better. ◀

Acknowledgement: The charts have been prepared with the help of B.Srujana, who has also helped research and develop some of these concepts.

Big tech seeks to cement digital colonialism through the WTO

Deborah James

Data is the most valuable resource in the world, and the engine of the digital economy. A central goal of the world's biggest corporations today is to have their government representatives use trade agreements to gain control of the world's data. They want to enshrine the right of Big Tech to transfer data anywhere in the world without restrictions, and to be able to use it exclusively for private profit.

Big Tech and its government advocates took a big step towards their goal in March 2019 by launching negotiations for a new agreement on e-commerce in the World Trade Organization (WTO). They are pressuring developing countries to join the talks by using the promise of "e-commerce for development." But their aim goes far beyond "e-commerce" and is an effort to gain the full liberalization of the digital economy of the future, and especially the control over data. Their efforts to gain new rights for Big Tech and limit public oversight and power are a backdoor attempt to rewrite the rules of the future digital economy, to achieve a 'WTO 2.0.'

The only way that developing countries will have a fighting chance at economic sovereignty is if they are able to preserve control and

ownership over their data. To do so, they must ensure that rules that would give corporations the right to privatize and control data are not enshrined in international law through trade treaties. Fortunately, many developing country leaders are expanding their understanding of the value of data and its importance for digital industrialization and for public interest driven development.

In December 2017, African governments, supported by civil society resistance, blocked new negotiations in the WTO on "e-commerce" at the eleventh WTO ministerial meeting in Buenos Aires. But all developed, and some right-wing developing, governments signed a "Joint Statement" supporting new negotiations on digital trade issues. Throughout 2018, they met on a monthly basis and circulated over 50 proposals. (Unfortunately, Director-General Roberto Azevêdo has encouraged the talks and the WTO Secretariat has been performing hosting functions for them, in spite of the fact that member states specifically excluded this role from its mandate at the December 2017 ministerial conference.)

In early 2019, on the sidelines of the World Economic Forum, signatories of the Joint Statement announced their intention to launch negotiations, notwithstanding the lack of mandate in the WTO.

Delegates from 76 countries convened the first talks on a "plurilateral" on digital trade in the WTO in March. They held their first

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round of talks in May, with plans for monthly future meetings.

Moving forward, Big Tech and its advocates will make every effort to pressure additional countries to join, and to conclude – or at least demonstrate critical mass in order to gain a new multilateral mandate – by the time of the twelfth WTO ministerial, which will be held in June 2020 in Kazakhstan.

Potential Negative Impacts

The potential negative impacts of the proposed rules on people’s lives in the digital global economy of the future go far beyond even what we can imagine today. Already, given our knowledge of the WTO and our collective experience with Big Tech, the impacts on policy space for development; on jobs and shared prosperity; on governments’ right to regulate in the public interest, including on antimonopoly policies; on privacy and other human, economic, and labor rights; on fair taxation; and many more issues are clear.

To start with, we need more democratic governance over the Big Tech industry. Surveillance capitalism is harming democratic functioning in our media, knowledge, culture, transportation, education, judicial, commercial, health, and other sectors, and damaging our democratic processes. Even in seemingly nondigital areas like farming, Big Tech agriculture corporations are increasingly using big data to control inputs, credit, logistics, and marketing, eroding the power and independence of local farmers who have no access to their own data. The proposed rules would give Big Tech more, not less, power over even more aspects of our lives.

Public interest data policies are essential for economic development and prosperity in all countries, and especially developing ones. Big Tech corporations’ extraction of data from around the world for private profit, using trade rules to gain rights to operate in markets while handcuffing governments’ ability to

ensure their populations benefit, is [digital colonialism](#). Data is the lifeblood of the future economy, as Big Data powers artificial intelligence, and so whoever controls the data will dominate the economy. That is why Big Tech’s proposal in the WTO to give them the right to *unregulated cross-border data transfers*, sometimes called “free flow of data,” is the most dangerous of all.

All countries, especially developing countries, need to harness the value of data for community economic development in the public interest, and for [digital industrialization](#). They must maintain the policy space to tailor policies on governance of data, including potentially maintaining data locally or regionally when that might be in the national or community interest. In addition to control over the transfer of data, proposals in the WTO to *ban countries from being able to require domestic data storage* or to *use local servers* would severely constrain countries’ ability to ensure that their citizens benefit from digitalization.

Digital policies must promote decent jobs for shared prosperity, not reduce workers’ power. This means creation of decent jobs and livelihoods and associated social and economic rights, not expanding the labor exploitation models of corporations like Uber and Amazon. Capital is taking an ever-larger share of workers’ productivity gains, partly because corporations have used their surplus wealth to rewrite the rules. The proposed “e-commerce” rules, such as *giving corporations “rights” to operate in markets* while simultaneously *banning governments from being able to require those corporations have a local presence or benefit the local economy*, are intended to further increase this [power disparity](#). The most important strategy to ensure that benefits of digitalization are widespread and inclusive is for governments to commit to full employment, focused on equity, including strong labor rights and decent work and working conditions for all workers; gender equality; workers’ data rights; and comprehensive and portable social protection including for platform workers. These rules will not appear in any WTO agreement.

“E-commerce” rules would also jeopardize stronger consumer protections, privacy, and rights. The proposed WTO rules would privilege corporate rights to data transfer, storage, and processing over consumer protections and citizens’ privacy rights in ways that cannot be fixed by rules in the WTO itself. Algorithmic decision-making, which can exacerbate racial, gender, and labor discrimination, must be subject to public oversight, not hidden as “trade in secrets” as in the proposals in the WTO to *ban governments from being able to [require disclosure of “source codes”](#)*. Human, labor, consumer, economic, and civil rights must apply equally in the digital sphere without being relegated to the category of undesirable “[barriers to trade](#)”.

Anti-monopoly regulations and enforcement must be urgently implemented at the national and international levels. Nearly all digital trade is dominated by a few global players from the United States and China, such as Google which integrates data from its search engine, web browser, email, maps, advertising, calendar, cloud storage, messaging, translation, video-sharing, mobile phones and operating systems, smart speakers, and other businesses to dominate those sectors. An ever-increasing source of Big Tech’s profit-making is derived from buying competitors and avoiding regulation. In addition to creating new and strengthening existing anti-monopoly regulations, governments must consider breaking up corporations engaged in harmful monopoly practices. Until this occurs, it would be foolish to tip the scale in favor of the monopolists’ power even further by agreeing to [their proposals](#) in the WTO.

Fairer taxation would be severely constrained by proposed “e-commerce” rules in the WTO that include at least seven mechanisms to limit tax liabilities for Big Tech, such as by directly *prohibiting customs duties on digital products*. UNCTAD research recently showed that 97 percent of the tariff revenue losses of digitizable products would be borne by developing countries. But Big Tech also wants to ban policies that countries use to assess taxes on corporate

profits, such as *requiring corporations to have a local presence* when they operate overseas or *requiring a local copy of financial records* for tax authority oversight purposes. Digital players are taking advantage of the intangibility of digital goods and services to avoid tax, and now want to codify that avoidance through trade treaties. Countries will not be able to achieve the Sustainable Development Goals (SDGs) without expanding tax-based fiscal supports to infrastructure to improve access to water and electricity, and to ensure quality accessible public services in education, health, and [social infrastructure](#) that can reduce unpaid and poorly paid care work in the home, mostly carried out by women.

The Global Context and the WTO

There are other issues of interest to global corporations that some developed countries are pushing in the WTO, including investment facilitation, limiting fishery subsidies, and expanding services liberalization.

But the biggest assault by developed countries outside of negotiation themes is to change the fundamental architecture of the WTO. Within the WTO, countries designate themselves whether they are “developed” or “developing,” with slightly more flexibilities to the rules applying to the latter. Developing countries fought for these flexibilities because they were rightly suspect that the rules being negotiated in the WTO, which often limit the use of the very policies that rich countries used to develop, would fundamentally benefit rich country corporations more than their own populations. Now, The U.S. and other countries are trying to abolish these small flexibilities by limiting their use only to the Least Developed Countries (LDCs). Under this proposal, the same rules would apply to Kenya or Ecuador or Vietnam, as apply to the United States, the EU, or Australia. This issue is at the heart of some of the “WTO reform” proposals that will be central to discussions during the G20 Summit in Japan this June.

But developed countries are also trying to introduce new “geometries” of negotiation along lines that put developing countries at an even further disadvantage. They are framing proposals – advocating the same neoliberal agenda, now also encompassing e-commerce – around issues of “gender” and also “micro, small, and medium enterprises” or MSMEs. Because women and MSMEs are found in every country, and because proponents claim that digital trade is beneficial to women and MSMEs, they then – without irony – argue that any new rules on digital trade would be good for women and MSMEs. The reality, of course, is that the proposals would be extremely [harmful to women](#) producers and consumers, especially in the global South, and would benefit large transnational corporations (TNCs) at the [expense of MSMEs](#) around the world.

At the same time, the issues of concern to developing countries are still being marginalized in the WTO. The main goal of developing countries for many years has been to transform rules governing *agriculture* so that they can distribute food to their poorest populations in a way that also supports farmers’ livelihoods, through the well-established practice of public stockholding. Unfortunately, this practice is generally not allowed under WTO rules, and the US and others have blocked negotiations on it for many years.

The other top issue that should be being discussed at the WTO is the *development agenda*, which focuses on allowing developing countries more flexibility from certain rules in the WTO that have directly harmed their ability to develop their own economies and foment industrialization. Developing countries have often found that WTO rules trap them in the lower rungs of global supply chains, making it difficult to increase the value added in their production. Yet the U.S., EU and other developed countries have refused to conclude the development agenda in the WTO for over 20 years.

All of this is occurring in a context in which “multilateralism” is under attack by the Trump

administration and other right-wing allies. Some WTO proponents are using these attacks as a way to bolster support for the institution. But Trump and his counterparts are a *result of* the failure of the broader neoliberal project to raise the standard of living for millions of people in the U.S., and around the world. The real struggle is not between multilateralism and nationalism, but between a pro-corporate form of globalization (neoliberalism) and true multilateralism for shared prosperity – which would involve comprehensively transforming the current trade system into one that is just, democratic, and sustainable.

Which Direction for the Digital Economy?

While proponents have been busy launching plurilateral negotiations in the WTO on digital trade, many developing countries have increased their interest in and understanding of the economic value of their own data for their future development. Members of the Our World Is Not for Sale ([OWINFS](#)) global network have been campaigning against rules on digital trade in the WTO on the basis that data should be used for public interest purposes, including for digital industrialization, not just for corporate profit. Some developing countries are raising this issue at the WTO, and also now at the UN Conference on Trade and Development (UNCTAD), where a [recent meeting](#) failed to agree on recommendations because the EU blocked any mention of the data issue. The key subject of data control is indeed going to be the major point of conflict between corporate advocates and those defending development and the public interest in the years to come; indeed, resource wars of the future will be fought over control of data.

Who benefits from digitalization, like with any technology, will largely depend on the policy landscape in which the technology is applied. That includes global rules set in trade agreements. In order for digitalization to have a positive impact on society and our shared en-

vironment, civil society must play a role in shaping those policies.

Civil society can advocate that governments participating in the talks should withdraw, much as Uruguay did during the talks on the proposed Trade in Services Agreement (TiSA) after an internal evaluation by multiple ministries revealed that it would have myriad negative impacts on Uruguayan peoples' lives. In Latin America, e-commerce negotiations participants include Argentina, Brazil, Chile, Colombia, Costa Rica, El Salvador, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, and Uruguay. (Interestingly, El Salvador, Honduras, and Nicaragua had not joined in 2017 but did in 2019 – perhaps under pressure from a Northern neighbor? Unfortunately, Chile, Mexico, and Peru already adopted some of the provisions on digital trade when they implemented the so-called Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), even though the digital provisions had been proposed by the United States, which left the agreement.)

Civil society can also play an important role in encouraging countries that are not participating in the plurilateral (in Latin America: Bolivia, Ecuador, Venezuela, and importantly, the Caribbean countries) to maintain their pro-development positions.

We need a new agenda for digital economic policies, and for the global economy generally. Countries must develop their own agenda

for digital industrialization. They must not advance the “e-commerce” rules developed by multinational corporations like Amazon, Google, Facebook, and Alibaba. Other models, including digital industrialization policies with strong user and labor rights, can more equitably distribute the benefits of the digital economy.

Developed countries have argued that it is better for developing countries to participate in the talks so as to ensure a more pro-development outcome. But such an outcome cannot be achieved in the WTO because the rules and policies needed for digital industrialization are the opposite of WTO rules, which give companies rights while constraining the role of the state in regulating.

More than 315 organizations from over 90 countries made these and other arguments in a letter ([EN](#); [ES](#)) sent to all WTO members, urging them “to abandon their push for digital trade negotiations in the WTO and focus urgently on transforming global trade rules for shared prosperity for all.”

Will Big Tech advocates conclude a new “plurilateral” deal among 76 (or more?) members by June 2020? Or will they gain a new mandate in the WTO among the 164 members? Whether they are successful will depend largely on the effort civil society mobilizes to demand that governments defend the economic interests of citizens against the predatory colonial ambitions of Big Tech corporations. ☞

Tensions and stalemates in the WTO

América Latina en Movimiento,
special *English edition*, April 2018

www.alainet.org/en/revistas/532



Humanizing the digital justice debate

Gita Sen

Gender relations are the warp and weft of society, and they are profoundly so, because human reproduction is implicated fundamentally in those relationships. We don't reproduce ourselves as human beings, as a human society, except in and through gender relations, (though one could get into a much larger argument about how and why and whether we will ever get to where we're producing test-tube babies and whatever...) We are not yet there at this point, except in limited ways.

So I think it is important for us to recognize that for now, and for the foreseeable future, that means that, if we believe that there can be no considerations of justice without thinking about humans beings and human relationships, then gender is in it from the outset. Because we cannot think about how, as human beings, we live, interact, survive and reproduce ourselves, except in and through gender relations.

Part of our problem, of course, is that, at least with capitalism, one of the reasons that gender has always been struggling on the margins is because human reproduction, in which gender relations are key, is on the margins. Capitalist accumulation does not care about what happens with human beings, except in very limited and narrow ways, and because of that ensuring human reproduction is always

pushed to the side. It is then dealt with only in limited ways and in the margins, not in the mainstream.

What happens because of that relegation to the margins that is at the heart of the capitalist system, is that when we start thinking about gender, tropes of vulnerability and victimhood surface immediately. Women as victims, women as excluded, women as marginalized. Such tropes have been with us, in the context of thinking about gender, almost from the beginnings of this phase of the feminist revolution and women's social movements, which date roughly from the 1970's; and they have been with us throughout. The gut response from feminists is to say no, we're not victims, we're agents. But even that is simply a kneejerk response to the trope of victimhood and saying "oh poor women". And then you have women and children and disabled and indigenous in a trope of victimhood and marginality and oppression that is all connected and flows along one line.

The canary in the mine

In my own work, I have been trying to replace that trope of vulnerability and victimhood. Not to say that there are no victims, of course there are, but everybody is a victim in the system, - except maybe Mark Zuckerberg! - but there are also all kinds of victims and of victimization. It's not specific to women.

So I have been trying to replace that trope with a different one, which is that of the canary in the mine. What happens to women, precisely because of women's location in the

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context of this very fractured relationship between production and reproduction, is often a forewarning of what is going to happen overall. And that's very important, particularly in this digital justice discussion, because you can already start seeing ways in which that may be the case. The canary dies before the miners do, and the canaries are kept there exactly so that the miners won't die. When the canary dies, get out of the mine!

So in a sense that trope may be a more interesting way of getting out of the idea of victimhood, to say that women may often be the first to experience the negative impacts of the system. So what does this mean for how we think about gender equality in the context of digital justice?

I am not going to make a big distinction here between the third and fourth industrial revolutions; that is, between the era of the entry of big computerization and what we are experiencing now - the transformation of the digital arena, that is threatening to transform all of society and life. For the purpose of this discussion, I shall slide from one into the other. And part of the reason for that is that one of the earliest things that happened with the third revolution of computerization was the financialization of the economy, which predated whatever it is that we are seeing right now. And that critically shapes the larger agenda, within which we are now talking about relations, justice, and how to move forward towards gender equality.

Gender inequality: the digital connections

How do I see the connections between unequal gender power relations on which many from within feminist and women's movements have been working, and digital justice? I will give just some flashes.

The first is *macroeconomics*. Finance, trade and tax justice are all critically affected at this point by what has happened between the

third and the fourth industrial revolutions. The domination of the real economy of goods and services production, distribution and consumption by the financialized globalization of today with its booms, bubbles and busts, has been made possible by the third and fourth industrial revolutions. The drive to open the world economy to free flows of finance means that national policy space has shrunk dramatically, in both high- and low-income countries. National economic policies are forced to serve the gods of the financial markets, leaving little or no room for policies and financing that support human subsistence and reproduction including the 'care work' that women do, provide social protection to all, ensure jobs and decent work, assure decent levels of education and standards of health, or protect the environment and the planet. Women are among the first (the canaries) and most affected by the heartless macroeconomics of today, as has been extensively researched and documented.

The second is *livelihoods*, where gender relations play a critical role, because of the issue of reproduction. When push comes to shove, the responsibility for undertaking the daily (and often unpaid) work of caring for people and ensuring their survival lands at the doors of women. Women have to feed and take care of families, children, old people, the sick and infirm, and their survival, not just biologically, but on a day-to-day basis. And that immediately gets us into areas like agriculture, fisheries, and food production where the digital is transforming methods of production and consumption, generating inequality and concentration on a global scale. The case of deep-sea mining, for instance, and the so-called 'blue economy', which DAWN has been researching in the Pacific, provides a direct and powerful example¹. A very large proportion of deep-sea mining is for the minerals that go into electronics. And so there is a very direct digital connection there. At the same time, the 'blue economy' is being pushed by pow-

¹ <http://dawnnet.org/2019/03/surfacing-the-agendas-of-the-blue-economy/>

erful corporate interests as being sustainable, even as seabed mining threatens to reproduce all the destruction of traditional fisheries that predatory trawling has done.

The third, of course, is *labor*, and while we keep talking and are very concerned - as we should be - about what happens in factories, there is the question of informal work and also that of unpaid work. Unpaid work, the bulk of which women are responsible for, that's where you get all human reproduction and it's also one of the reasons why women are overwhelmingly in informal and poorly paid work. When macroeconomic policies driven by financialization based on digital technologies, shrinks the public resources for social protection, and care work, the hidden tax on women, through unpaid work, starts becoming a killer. It is what makes it difficult and often impossible for women to be in formal labor markets or to demand higher pay and better working conditions.

Finally, the fourth is all of the sectors to do with *human development*, such as education and health. In these sectors, digitalization is making major inroads, with some positive and many negative impacts. The digital invasion of primary education may make possible some quality improvements in schooling. It also opens the possibility of de-skilling teaching, and replacing higher skilled schoolteachers, often women, by lower-skilled, worse paid part-timers.

I believe that, in our discussions about digital justice, the issue of how we humanize this discussion is central. It is critical that we don't get swept away on a sea of robots, blinking lights and shining objects. From that point of view, considering what gender means in the context of digital justice has to be part of a critical discourse and a progressive agenda from the very beginning. ☞

This is the edited transcript of a talk given at the Workshop Equity and Social Justice in a Digital World (Bangkok, March 2019).

Just launched:

[Bot Populi](#) is an alternative media platform dedicated to looking at all things digital from a social justice and global south perspective, including inputs designed to influence the norms, rules and practices that contribute to transformative change.



The digitalization of work and its consequences for the Global South

Cédric Leterme

The “digital revolution” and the way it impacts work are receiving increasing attention, but this attention remains mainly concentrated in countries of the Global North. Yet, these developments also concern countries in the Global South, but with particular modalities that require specific analyses and reactions.

There is a growing global debate on the nature and scope of a “fourth industrial revolution”, with potentially significant impacts on employment and more broadly on labour. Two trends are especially discussed. First of all, the automation of tasks, particularly owing to advances in artificial intelligence. Secondly, the development of “platform work”, in particular via applications such as Deliveroo or Uber. These trends are observable worldwide, but their consequences are not the same for workers in the Global North and Global South.

Automation, for example, could eventually threaten more jobs in the South than in the North, but at a slower pace. Nor are the same sectors (and therefore the same workers) concerned in both latitudes. The automation of agriculture, for example, will have specific consequences in the South, with increasing concentration of farming, an even more acute competition facing small producers and the strengthened control of large global agri-food

groups over global agricultural production and distribution. Finally, the potential for automation in the North significantly reduces the “comparative advantages” that countries in the South have hitherto been able to derive from the (literal and figurative) exploitation of their abundant cheap labour. Export-led industrialization strategies, pursued in particular by many Asian countries (and acclaimed throughout the developing world in the 1990s), may thus no longer be accessible to many developing countries, leaving open the question of available options to replace them.

Platforms as opportunities or threats?

Concerning platform work, there is a tendency to view it mainly in the North as a threat to traditional employment relationships, insofar as they generally offer a task-based remuneration, most often under a self-employed status. However, the threat is obviously not the same in southern countries where wage employment has never been the norm. Some, such as the World Bank, even see the development of on-demand working platforms as a boon to people in the Global South. Indeed, it is usually enough to have a smartphone and an internet connection to be able to start working. And “micro-work” platforms even provide access to job offers that can come from anywhere in the world. In addition, at present many of these tasks (e.g. delivery, taxis, cleaning) are carried out in the informal sectors, which means that these platforms

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make way for a (relative...) formalisation of this work, unlike what is happening in northern countries.

However, it should be recalled that Internet access is far from being widespread in the South, with penetration rates often below 50% of the population (especially in sub-Saharan Africa and South Asia) compared to around 90% in Europe and North America. And it is precisely the already most marginalized sectors of the population who have the least access to it. And even when they do have access, the quality is often lower than that of the most advantaged populations/regions, not to mention the differences in skills and qualifications that constitute an additional handicap. More than a boon, the arrival of these platforms could therefore lead above all to the further marginalization of the least qualified and/or least connected workers, in particular by further restricting the limited opportunities they hitherto had in the informal economy.

Moreover, the idea of neutral platforms free of “race”, class or gender bias is also false. Indeed, users’ personal information is by nature accessible to others through their “profile” and (at least for the moment) nothing prevents this information from being used to refuse a service provider and/or to refuse to perform a service. Even algorithms are not immune to this type of bias since the criteria they use to assess, rank, etc. may favour some population groups over others. As various studies have shown, far from eliminating inequalities, platforms are therefore part of their reproduction (or even aggravate them), both within and between countries.

Finally, it should be recalled that working conditions in these platforms also remain problematic, with low and irregular pay, excessively long and/or variable working hours, the lack of social protection and collective bargaining, the dangerous nature of activities and discrimination.

The broader challenge of the “digital economy”

More broadly, however, it is above all the very logic underlying the functioning of the digital economy as a whole that constitutes the main challenge for workers in general and for workers in the South in particular. Indeed, this new economy is based on the extraction and exploitation of “data” whose status is ambiguous to say the least. On the one hand, companies consider them as resources they can use as they wish. But on the other hand, these data are produced by individuals and groups of individuals who could assert legitimate political and social rights over them. We often talk about the right to privacy, but this could also include the right to remuneration or collective control of authorized uses.

Another problem is that the network effect associated with services based on those data leads to the creation of huge monopolies with unprecedented market power, resulting in new forms of control and exploitation of labour, which are hard to combat as they tend to appear as the consequences of strictly technical processes. For example, Amazon relies on recording its workers’ productivity data to automatically lay off those with the lowest performances. More broadly, as a sector digitalizes, it becomes increasingly difficult, if not impossible, for small producers to participate without entering more or less directly into the dependence of a digital giant.

The situation is even more problematic for workers and populations in the Global South, since most of these digital monopolies are based in the North, and in particular in the United States, creating new global dependencies and exploitation relationships with potentially significant economic and geopolitical consequences. In this context, the ongoing global discussions on the liberalization of “e-commerce” will prove crucial, since they may well enshrine the current situation by drastically limiting the possibilities of regulating the digital economy for the benefit of

populations and workers, particularly in the South. The Trans-Pacific Partnership Agreement (TPP) or the new United States-Mexico-Canada Agreement (USMCA) already include clauses that prevent the “free flow of data across borders” from being infringed, or that ban data localization requirements. And this type of clause is now being discussed worldwide within the framework of the WTO¹.

However, other orientations are possible. At a minimum, they imply curtailing the current

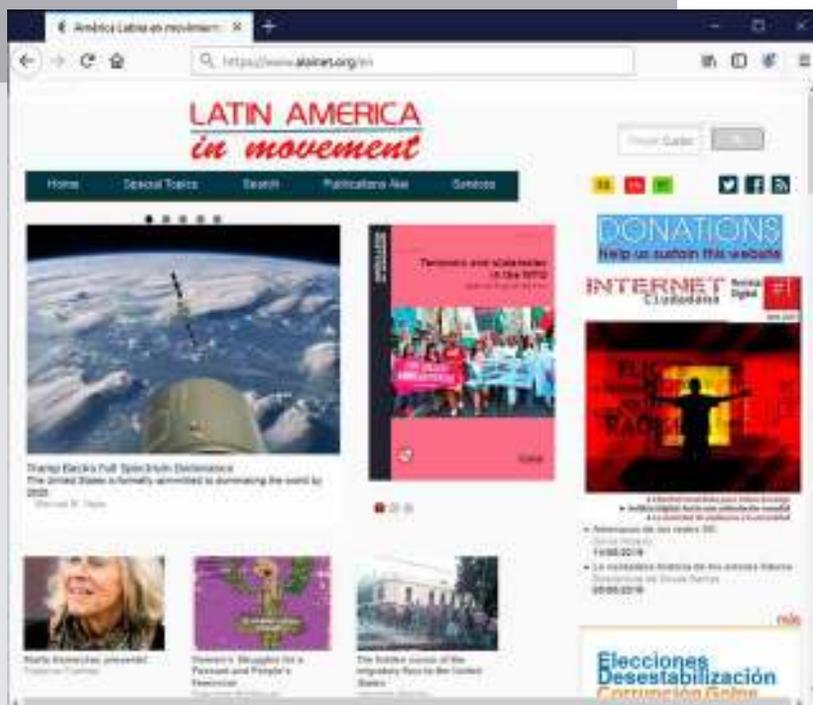
discussions on “el-commerce” in order to avoid reducing the issues raised by the digital economy to the sole angle of trade. Its implications include the economy as a whole, but also the political sphere and the sphere of human and social rights. Only then could we conceive principles, policies and institutions to make digital technologies available to workers and populations in the North and South, while respecting environmental constraints and development differences between countries and regions of the world. ☞

1 See: <https://www.cetri.be/OMC-lancement-de-negociations>.

(Translation: the author and ALAI)

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Digital public services

Kate Lappin

Digital technologies are re-shaping the nature and experience of labour, public services and the very nature of the state and a functioning democracy. Digitalisation and the collation of large amounts of data, can enhance the design and delivery of public services, increase occupational health and safety, reduce working hours and provide for greater democratic participation and accountability. Yet, when digital governance is designed by and for multinational corporations, it amplifies the rate of corporatisation and privatisation of public services and increases precarious work.

The global labour movement has made repeated efforts to address the impact of digitalisation in diminishing labour rights, violating the privacy rights of workers and particularly driving precarious work. Automation and artificial intelligence are projected to fundamentally re-shape and replace some areas of work. The conditions of workers in the 'platform economy' or the 'uberisation of work' requires a fundamental re-think about how we govern employment and protect workers outside of traditional workplaces. The ILO's 'future of work' centenary initiatives address some of these threats. But to understand digital threats to workers and public services we need to address the political economy of digitalisation and question who should own, who should profit from and who should benefit from technological advances, including the aggregation of peoples' data.

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Data is clearly a resource that has value. That value can be monetised and generate unprecedented profits. The value could also be seen as a public resource - a resource that is needed for governments to provide quality public services. The public has generated the data and should have a right to have that data used for common good. It is now commonly recognised that data is the most profitable resource in a digitised economy - the 'new oil'. Corporations increasingly offer platforms or infrastructure as a means of collecting lucrative data. Tesla, for example, is valued not as a car manufacturer, but as a platform for data collection.

Governments gather a large amount of data critical for effective governance, planning and the delivery of public services. Data is critical in all government policy making and includes environmental data critical for climate, agriculture and public health planning, public registries, data on private sector compliance and tax, transport, education, the use and distribution of utilities, to individual data potentially including health, work, wealth and income, education, family life.

But it's clear that digital corporations have plans to increase profits through the delivery of public services. Samsung, for example, projects that a significant amount of future growth will come through health related applications, like digital diagnostics. Public transport tickets in several cities can now be paid for through Google Pay that then offers a digital ticket, leaving a large amount of transport data with the company. An application in Australia designed to assist the public to book an appointment with a doctor was found to be selling information to plaintiff law firms enabling them to contact users to lodge compensation claims.

Digitally induced privatisation of public services takes place through varying paths: the outsourcing of key public service functions using the false premise that the public sector lacks the expertise; public-private partnerships with the private sector, where the private sector retains the intellectual property produced and often retains access to collected data; private sector using technologies to financialise public services like health, education, utilities, transport as well as public records and data. Private sector partnerships in the delivery of digitalised public welfare services are problematic because they shift the relationship of citizens with their democratic institutions to a relationship of client. At the same time, those private sector products and profits have been dependent on public funding. Researcher Mariana Mazzucato has famously shown that every major technological advance, from life-saving pharmaceuticals to the I-phone, has been dependent on public research or funded by public grants.

‘Smart’ cities?

The enthusiasm for ‘Smart Cities’ - cities that engage sensors, big data and automation to manage traffic, parking and public transport, frame planning decisions, increase policing and security, deliver services and automate administrative decisions, including those relating to welfare payments and services -, promises less traffic congestion, better public transport and more targeted and efficient public services. However, the propensity to develop smart cities through partnerships with the private sector generates risks of displacing public sector workers, gifting large amounts of community data to for-profit corporations, shifting urban design toward profit and efficiency motives, producing perverse automated administrative decisions and effectively privatising public services and public spaces.

Bill Gates has bought up land to build a smart city the size of Paris.¹ The City of Toronto has

1 <https://www.businessinsider.de/bill-gates-smart-city-pros-cons-arizona-urban-planners-2017->

formed a development corporation to develop the former docklands in Toronto in partnership with Alphabet (Google). The Indian Government have set an aim of developing 100 Smart Cities. The city of Gurgaon, one of the newest cities in India, serves as a harbinger of the future of cities built by tech companies. The city was built on the outskirts of Delhi to house the growing number of multinational tech companies seeking a presence in India. Google, Nokia, Intel are all present. The city was built by the companies based there. All services, including emergency services, street repairs, water, energy have been developed by corporations. Residents have apps to improve security, garbage trucks have sensors, the privately run fire service claims to have the most advanced trucks in India. Yet while Gurgaon boasts state-of-the-art buildings and houses, some of the country’s wealthiest, residents who live in its many slums have no access to water, mountains of uncleared garbage and their roads are full of potholes. There is no sewage system in Gurgaon, “so private companies collect the sewage in septic tanks and dump it in nearby rivers or on open land. Privately drilled borewells have quickly depleted the amount of groundwater in the city”.²

Big data companies are not just providing contracted services, they are designing cities that will generate greater profits for them and greater opportunities to extract valuable data. Will residents of the Gates city be required to use Microsoft products to operate their services? Will deliveries in Toronto depend on Google driverless cars? Will the extensive data collected in these cities be used to build public services or will it be used to generate further profits and sit in tax havens?

Data as a public good

Outsourcing the development of digital technologies to the private sector diminishes op-

11?r=US&IR=T;

2 <https://www.theguardian.com/sustainable-business/2016/jul/04/gurgaon-life-city-built-private-companies-india-intel-google>

opportunities for the public sector to grow expertise further, develop innovations that have the greatest public good and stimulate digital industrialisation. Outsourcing and partnerships also pose risks to the quality of public services. Outsourcing of digitised visa processing in the UK left applicants at risk of deportation; outsourcing the digital census process in Australia to IBM was an unmitigated disaster, with the system failing within minutes of launching and concerns that the public's data would be easily hacked.³

Given the vast amount of profits projected, it is no surprise that techno capitalists seek to ensure that data flows are unregulated and able to be commercialised. Through trade agreements, and potentially through the World Trade Organisation, governments are surrendering the capacity to effectively manage data flows in ways that will enhance the public good. The e-commerce chapter of the erroneously titled Comprehensive and Progressive Trans Pacific Partnership Agreement (TPP), effectively prohibits governments from protecting data as a common resource. The agreement requires governments to protect free flow of data, prohibits data localisation laws and any requirement for digital corporations to register a local presence in the countries in which they operate.

The public benefits that digitalisation can deliver will only be realised if data is recognised as a commonly owned public good and accompanied by the regulations and institutional public bodies that public goods require. There is an urgent need to develop the public institutions and infrastructure required to enable data for the public good, to deliver a data commons capable of not just regulating big data but of delivering data as a public

³ <https://www.businessinsider.com.au/disaster-australia-just-tried-to-take-its-census-online-and-the-site-crashed-2016-8>

commons designed to support better public services, support more effective regulation of the private sector, provide government revenue and give the public control over the use of their data.

If the economies of the future are going to provide decent work, universal social protection and quality public services, unions and civil society will need to use our collective power and democratic agency to:

- Stop the privatisation of public services by digital corporations
- Stop trade agreements and trade rules that guarantee deregulation of data and prevent governments from developing digital industrialisation policies
- Ensure governments develop policies and institutions to recognise, administer and regulate data as a common good
- Develop new global rules for corporate structures and taxation that prevents digital companies from hiding profits in tax havens.

History shows us that when technologies are in the hands of the private sector, productivity gains end up as increased profits unless strong unions ensure a regulatory environment that distributes the gains to all. It is imperative that trade unions and civil society advocates understand the impact of digitalisation on workers, on organising, on the economy, on security, on our right to quality public services, and on the capacity of governments to govern. ☞

A version of this paper was presented at the global workshop on **Equity and social justice in a digital world**, organised by the Just Net Coalition.

Digital technology in the education sector

Gurumurthy Kasinathan

Education has been accepted as a project for social and political transformation, with the development of each individual not only for her economic gains, but also for building a just and humane society¹. It also needs to promote awareness and build agency for sustainable development and harmonious co-existence. Global policy documents such as the Education for All (Jomtien 1990, Dakar 2000), Millennium Development Goals and the Sustainable Development Goals, emphasize universal education.

Yet we are a long way from universal quality education in most of the world. While education is recognized as a public good, governments are unable and/or unwilling to make required public investments in education, in terms of ensuring universal access and quality. Per student expenditure on education is low, far below what developed countries spend, to build universal public education systems. Private expenditure on education has been increasing as a response to this shortfall. However increasing private expenditure, where individuals fund their children's education, is leading to increased stratification of the education system, as education acquires the nature of a 'market good'. The rich are able to afford expensive good quality private schools while the marginalized sections enroll their children in so called 'affordable schools'²

1 John Dewey. Democracy and Education

2 See 'Advocacy networks, choice and private schooling of the poor in India'. <https://bit.ly/2RjtY28>

Gurumurthy Kasinathan, IT for Change, India.

which are too ill-resourced to be capable of providing meaningful education.

The poor investment in education also results in poor quality of teacher education, and inadequate academic infrastructure. Teachers are unable and/or unwilling to provide support to the learning processes. In this context, digital technologies (aka Information and Communication Technologies, or ICT in short), are sometimes seen as a solution that can address curricular resource shortage, teacher shortage and teacher quality. Programs that develop e-content and provide it on scale to teachers may aim to alleviate or solve the problem of quality teaching learning materials. Video recordings of teaching or on-line learning platforms are seen as reducing the need for teaching and teachers in schools. Used in this manner, ICT can de-skill education, making it poorer. In addition, ICT programs in education can end up harming the goals of education, through the two processes of 'privatization' and 'centralization'³.

ICT as a threat to education

As in other socio-economic spheres, in education too, IT companies are big players in the ICT and education space. They provide 'ICT based education services' to schools through e-content and ICT faculty. As their digital content can be easily replicated across schools, it is seen as a solution for the large scale content needs of the public education system.

[ly/2RjtY28](https://bit.ly/2RjtY28)

3 See 'Domination and emancipation: A framework for assessing ICT and Education programs'.

However, this process usually results in the teacher remaining a ‘consumer’ of content created elsewhere, with this ‘e-content’ joining the text book which is produced for all schools by the state education departments. It also leads to privatization of the school curriculum. While text books and other state government created materials need to comply with national and state curricular frameworks and accepted educational principles, such conformance is not explicitly expected or seen in the case of e-content, whose quality is often suspect. Increasing the role of a privatized curriculum, in the absence of safeguards to ensure alignment to educational aims threatens the larger transformatory goals of education discussed earlier, as private vendors usually restrict their e-content to narrow academic areas.

Secondly, the provision of such e-content is moving to the ‘cloud’, where schools need to connect to the platforms created by the companies to access resources. While the cloud alleviates the requirement of dynamic content, it can lead to centralization and ‘one-size-fits-all’ mode of content delivery.

Such centralized and privatized modes of ICT implementation in a content delivery mode is attractive to both education bureaucrats (who often have a deep distrust of the teacher) and to companies. However, they dis-empower the teacher and reduce possibilities for contextual learning. The teachers’ role is restricted to that of being a ‘user’ or ‘consumer’. The possibilities of exploring learning pathways, and addressing diverse learning needs of different students become constrained by the thinking behind the pre-packaged content.

ICT as a process of empowerment

However, ICT in education can be imagined in much more empowering ways. ICT can strengthen teacher professional development by enabling the teacher to access diverse information repositories, and make choices of what to use and adapt. Teachers can also con-

nect to one another through digital networks for peer learning and sharing. Digital networks are the important reason for the emergence of ‘Communities of Practice’ as a powerful tool for teacher professional development⁴. Larger groups of ‘professional learning communities’ across wider geographies can also serve as forums for sharing resources, experiences and ideas.

More importantly, digital applications can be used by teachers to create their own learning resources. Seymour Papert⁵ popularized the idea of ‘constructionism’ in which learners can use digital tools to ‘create, learn’ and ‘learn and create’, which is a virtuous cycle of freely exploring digital applications to develop learning materials and through this process learn, both about the use of the digital tools, and the processes of material development. The process of material making also strengthens the agency of the teacher and develops her creative capacities. It enables her to envision resources that are appropriate for the specific and diverse needs of her learner cohorts.

Support large-scale material development

The process of creating digital learning materials by teachers has another potentially beneficial outcome - the development of open educational resources on scale. If teachers’ capacities to use digital applications to create digital materials is developed on a large scale, and these resources are shared by teachers with one another, and published on platforms/repositories for others to use/adapt, using copyright that enables such sharing, it would be a powerful method of creating resource

4 See for instance ‘The role of communities of practice in a digital age’ by Tony Bates. <https://bit.ly/31pvEMh>

5 An interesting read is: Edith Ackermann. Piaget’s Constructivism, Papert’s Constructionism: What’s the difference? <https://bit.ly/1J220jJ>. The NCERT ICT Curriculum also emphasizes that ICTs can be used by teachers and students to ‘create and learn.’

rich learning environments. In the context of non-English learning environments, such a model would be even more useful, as curricular resource availability in most languages in the developing countries is a fraction of what is available in English.

Professional Learning Community

The approach of building capacities of teachers to network and create using digital technologies on scale, has been adopted by IT for Change, the organization I am a part of, to build professional learning communities of teachers in the provinces of Karnataka and Telangana in India⁶. In the 'Subject Teacher Forum' program, initiated by the Karnataka department of school education, in collaboration with IT for Change, teachers have enjoyed learning a diverse set of digital tools (which being free and open source can be easily shared with them and by them with others), to develop digital learning materials which they have used for their practice and shared with peers⁷. The program has created an environment of widespread use of digital technologies by teachers for their own learning and collaborating. The 'Professional Learning Communities - Open Educational Resources' [tool-kit](#)⁸ developed by IT for Change provides details on this model of teacher professional development.

Free and Open technologies

In order to ensure that ICTs are used to empower teachers and schools, it is essential to adopt free and open technologies. Proprietary

technologies are inimical to teacher empowerment due to multiple reasons:

1. they constrict teachers agency to freely share with learners and peers
2. as the source code is closed, they cannot be easily enhanced to meet teacher/learner requirements
3. in contexts which are resource starved, the need to individually license proprietary technologies makes them prohibitively expensive for large scale adoption/adaptation.

The use of free and open source software, open educational resources and open hardware is indispensable to building a strong and independent culture of ICT integration in the school system.

Artificial Intelligence

Digital technologies have seen rapid changes in a short period, and the latest is 'artificial intelligence' - the use of big data and machine learning to develop predictive models. In education, it is claimed that AI can address the diverse learning needs of learners by:

1. teaching through personalized education where custom content, pedagogy and assessment can be derived for each student based on her/his responses to past activities and assessments
2. self-learning through adaptive practice
3. macro diagnostics and predictive models, across groups of learners (by geography, demographic profile, grade, medium of instruction, subject and other categories) to provide inputs for policy and program.

AI can be useful if it is used to provide teachers a range of content and pedagogy possibilities, based on analyses of learning contexts. How-

6 The Kerala 'IT@Schools' program pioneered this model, which IT for Change has adapted in other states of India.

7 See case study on the Subject Teacher Forum program by Prof Rajaram Sharma, Joint Director NCERT (retired). This program is now being continued by the department as the 'Technology Assisted Computer Learning' program.

8 'Professional Learning Communities - Open Educational Resources' A tool-kit, retrieved from <https://bit.ly/2wtKLLl>

ever, the danger that can and will be used to further de-skill and reduce the role of teacher is quite clear. Secondly, this 'big data' is being collected by companies in a 'finder is owner' paradigm; this has the potential to make the teachers and students vulnerable to commercial exploitation and political surveillance.

More importantly perhaps, from an education perspective, the transformatory potential of education requires moving beyond the past towards the normative, whereas the essence of AI is to predict the future based on past trends. This tendency to project the past has already mired AI in controversies of bias and harm, and if unchecked, this will be even more dangerous in education, as it will tend to re-create existing socio-economic hegemonies and power disparities.

Conclusions - questions to ask

Hence in order to realize beneficial possibilities of AI in education and to avoid or minimize harm, it is essential to ask the political economy questions - who does it benefit and who controls it? More specifically:

1. Does the use of digital technologies support the achieving of established educational aims, or is it based on technological hype of 'simpler', 'faster' etc. which hide what outcomes their use would foster? Digital technologies should be adopted only when the answer to this is clear - that

the use would support the achievement of specific educational aims.

2. Are these technologies owned by the schools and the teachers? Can they make changes or seek changes as they need? Or are the technologies owned by private and commercial entities which may respond only if there are profit making opportunities, or which may manipulate the use of technologies for surveillance of schools, teachers and learners?
3. Who owns the data created / accessed through digital applications? Who controls its use? What should be the role of private providers of digital services in managing and controlling the data?
4. Does the use strengthen teacher agency and school autonomy, by providing more opportunities and authority? Does it provide teachers and schools more content and pedagogy opportunities or does it narrow their possibilities? Does it weaken schools and teachers by making them spokes of centralized / platform based hubs which have the power and control?
5. Is the use of AI further aggravating the problems of centralization and privatization? Can the use of AI be imagined in ways as to support autonomy of the school and the agency of the teacher? ☞



[Internet, power and democracy](#)

América Latina en Movimiento,
special *English language edition, April 2014*

The loss of privacy and security of our communications is deeply worrying, but even more dangerous is how power is becoming concentrated in the hands of those who control technology, data and knowledge.

From *Terminator* to *Exterminator*

Neth Daño, Jim Thomas
and Tom Wakeford

It has been twenty years since ETC Group uncovered a US patent on what became known as ‘terminator technology’ - seeds genetically engineered to stop farmers breeding from them¹. Civil society and farmer movements protested that such ‘suicide seeds’ would threaten seed-saving practices that are as old as agriculture².

The story of Terminator became iconic in the global battle over genetically modified organisms (GMOs). Only interested in protecting their profits, its developers failed to assess the potential social, economic and environmental impact of engineering sterility. Following an uproar from across society, including United Nations bodies, Terminator was placed under a global moratorium under the UN’s Convention on Biological Diversity (CBD) in 2000.

Terminator was part of ‘first-generation’ GM crops, which involved altering common crops to be resistant to pests (such as cotton bollworm) or weed-killers (such as Bayer-Monsanto’s *Roundup*). GM crops ran into problems when many consumers didn’t buy foods grown

using GM and farmers found the promised benefits only materialised, if at all, in the short-term.

Realising that their attempts at achieving public acceptance had got off to a bad start, biotech firms such as Syngenta (now part of ChemChina), proposed a second generation of GM crops that would have clearly defined benefits. The public relations coup was meant to be a variety of rice produced through genetic engineering to biosynthesize a precursor of vitamin A. However, this ‘golden rice’ was not the ‘magic bullet’ solution that its promoters claimed. In 2008, WHO (World Health Organization) malnutrition expert Francesco Branca cited the lack of real-world studies and uncertainty about how many people will use golden rice, concluding “giving out supplements, fortifying existing foods with vitamin A, and teaching people to grow carrots or certain leafy vegetables are, for now, more promising ways to fight the problem”³.

Now biotechnologists have a child-of-terminator technology, that could have even more far-reaching consequences called ‘gene drives’. Where Terminator allowed companies to render their own proprietary seeds sterile, gene drive organisms (GDOs) go further - actively and invasively spreading engineered genes into the wild. GDOs potentially pose a far more dangerous threat to people’s rights, food security and the environment than Terminator ever did.

1 See: <http://www.etcgroup.org/content/terminator-five-years-later>

2 See resources at: <http://www.etcgroup.org/issues/terminator-new-enclosures> (in English) and <http://redtecla.org/> (in Spanish) and <http://www.etcgroup.org/fr/content/des-technologies-terminator-aux-technologies-exterminator> (in French).

3 Enserink, Martin. “Tough Lessons From Golden Rice.” *Science* 320, no. 5875 (April 25, 2008): 468-71.

Neth Daño, Jim Thomas and Tom Wakeford,
Action Group on Erosion, Technology and Concentration (ETC Group).

Exterminator drives

Gene drives appear to only be operational in laboratory settings, so far, and are designed to be invasive and persistent in natural ecosystems. GDOs are genetically engineered to make them take over and then potentially eliminate entire populations. We should call them what they are: ‘exterminator drives’. Since their first emergence in 2014, GDOs have become a public relations poster-child for the biotech industry to re-launch itself as socially useful. It has become an increasingly important investment vehicle, as GM-free markets boom and consumer lawsuits against the industry’s previous innovations proliferate⁴. While scientists promoting GM crops used golden rice to claim the moral high ground, those promoting gene drives claim they could help end an even bigger global killer - malaria. Through a project called *Target Malaria*, led by Imperial College in London in the UK, US\$100 million is being directed to gene drive research, with the release of the first GMO mosquitos in 2018/19 being followed by GDO mosquitos in West African villages; the promise is that the technology will soon eliminate one of the world’s most deadly infectious diseases.

Calls for the use of GDOs to tackle malaria often ignore the kind of well-proven techniques that have eradicated the disease in scores of countries, most recently in Paraguay and Sri Lanka. Target Malaria’s GDOs are being promoted as a vital ‘tool in the toolbox’ against the disease, whereas in fact they would be a high-stakes gamble with the ecology of food systems and biodiversity across the planet.

While first-generation GMOs mostly spread engineered genes by accident, GDOs will be designed to do their own engineering among wild populations out in the real world. Their spread to those populations would be deliberate. Scientists behind GDOs have only just begun to ask what would happen if the genes

aren’t quite as well behaved as their Mendelian models intended. What if genes for female sterility, for instance, which have been shown to eliminate mosquito populations in the lab, transferred to species that pollinate our crops or are a food source for birds, reptiles, even humans? What if genes that were beneficial became disabled, or if genetic disruption increased the prevalence or altered patterns of diseases?

Farm Gates

Multi-million-dollar grants for gene drive development from the Bill and Melinda Gates Foundation, the Foundation of National Institute of Health, the Open Philanthropy Institute, The Wellcome Trust and the US Defense Advanced Research Projects Agency have included generous allowances for public message testing, public engagement exercises, lobbying and communications activities. One initiative, the ‘Gene Drive Outreach Network’, curiously fails to mention any proposed agricultural uses of gene drives in its factsheets, focusing only on ‘global health’ and ‘conservation’ uses⁵.

This omission of agricultural uses in the promotion of GDOs is not accidental. It fits exactly with the priorities expressed by gene drive pioneers such as Kevin Esvelt of the Massachusetts Institute of Technology (MIT), who holds one of two key foundational patents on gene drives. More than a quarter of his 38-page patent is taken up describing agricultural applications for the technology. Yet, in conversation with one of the authors (Thomas) in 2016, Esvelt commented that agricultural applications should wait on public health and conservation applications simply because the benefits are not as clear to ordinary citizens. He also commented that it would be a bad idea to talk publicly about the agricultural uses listed in his patent, such as reversing herbicide resistance in weeds, because it would only benefit Monsanto (now Bayer).

⁴ See: <https://uk.reuters.com/article/us-bayer-glyphosate-lawsuits/bayers-monsanto-faces-8000-lawsuits-on-glyphosate-idUKKCN1L81J0>

⁵ See: <https://genedrivenetwork.org/resources/7-factsheet-whats-a-gene-drive-july-2018/file>

GDO developers may be warning agribusiness and each other to keep a low profile on gene drives but that is not to say agribusiness is not actively engaging on the topic. From internal communications obtained by civil society organizations through access to information laws in the US, officials of the former Monsanto were closely in touch with military scientists in 2017 on classified study on gene drives⁶. Agribusiness majors, including Syngenta (now owned by ChemChina) and Dow Agroscience (now Corteva), have also been closely involved in US Gene Drive policy discussions⁷.

Global genetic force-feeding

Releasing limited local or targeted gene drive organisms as a service may be the most obvious business model for agricultural use, but making money from ‘global drives’ may also be possible for gene drive companies. Esvelt and others have proposed that so called ‘sensitizing’ gene drives could be released into weed or pest species that make those species susceptible to a particular chemical compound, such as an herbicide or pesticide - for example re-sensitizing pigweed (*Amaranthus palmeri*) to Monsanto’s Roundup (glyphosate) or to a new proprietary chemical. This approach would enable the manufacturer of the compound (in this case Bayer) to sell their proprietary chemical as perfectly matched to the wild weed species. Whereas the former Monsanto previously made its crop seeds ‘Roundup-ready’ (that is, resistant to glyphosate) to boost glyphosate sales, now it is the weed itself that becomes ‘ready’ to wilt in response to Roundup. When weeds are not totally eradicated, they may evolve to become resistant once again to the herbicide of interest. In such a situation, the gene drive is

6 See: <http://genedrivefiles.synbiowatch.org/2017/12/01/us-military-gene-drive-development/#8>

7 A Feb 2016 workshop to develop a roadmap on gene drive research included the international policy lead for Syngenta, Tichafa Munyikwa. On another occasion, discussions included Steven Evans of Dow Agrosciences.

only a temporary solution and would have to be applied repeatedly.

Challenges for policy-makers

While gene drive developers claim that there may be ways to effectively contain GDOs in the future, these hypothetical claims and assumptions need to be rigorously examined and tested. Strict laboratory handling and containment rules for all gene drive research must be internationally agreed and put into practice before further research can proceed, even in the lab. At present, it appears possible for scientists to develop new GDOs without them being subject to any specific biosafety regulations. In some jurisdictions, such as Brazil, it is not even clear whether they will be subject to the weak biosafety rules that controlled the development and use of GMOs.

Technologies that originate in the laboratory, such as GMOs and now GDOs, ignore deep-seated injustices and power imbalances which require political answers and democratic scrutiny, rather than technical quick-fixes. At both national and international levels, questions of technology assessment and societal consent have only begun to be formally addressed since pressure was put on by grassroots-based and other civil society organisations.

The recent meeting of parties to the CBD in Egypt recognises the serious risks and ‘uncertainties’ around the gene drive technology⁸. It calls upon governments only to consider introducing gene drive organisms into the environment for experimental research, when “scientifically sound case-by-case risk assessments have been carried out,” when “risk management measures are in place to avoid or minimize potential adverse effects” and when the **“free, prior and informed consent” of “potentially affected indigenous peoples and local communities is sought or obtained”**.

8 See : <https://www.cbd.int/COP2018-EGYPT.PDF>

The outcome of these negotiations places consent at the heart of any path toward the potential release of gene drive organisms, which has put the spotlight back on the adequacy of Target Malaria processes for gaining consent in villages in Burkina Faso where they are scheduled to soon release ‘male sterile’ genetically modified mosquitoes as a preliminary step towards releasing others with gene drives. Target Malaria argue that “it’s not logistically possible to obtain consent from each and every person affected” when it comes to GM mosquitoes. However, when it comes to such a controversial technology, with potentially serious ecological effects and as yet unknown consequences for health, giving consent cannot be limited to a handful of residents.

Today it is Burkina Faso that is being forced gene drives. Yet, decisions taken in this

African state in relation to this exterminator technology could set an international precedent. Proposals to release gene drive organisms on indigenous territories in New Zealand⁹, Australia¹⁰ and Hawaii¹¹ are on the agenda for the coming months. The world needs to ask how genuinely release proponents are seeking to obtain “free, prior and informed” consent and what rights people will have to say yes or no. ↩

9 See : <https://www.islandconservation.org/gene-drive-conservation-game-changer/>

10 See: <https://www.smh.com.au/environment/conservation/could-wa-be-the-genetic-testing-ground-for-synthetic-mice-to-end-mice-20180221-h0wev9.html>

11 See: <https://www.technologyreview.com/s/601383/the-plan-to-rescue-hawaiis-birds-with-genetic-engineering/>

[Towards a people’s Internet](#)

América Latina en Movimiento, special English language edition, April 2015

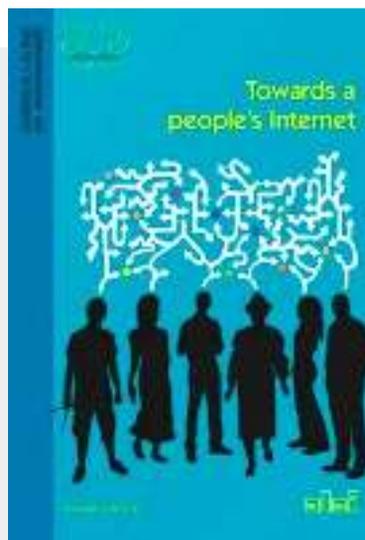
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