POLITICS OF TECHNOLOGY

A GROWING CULTURE & ETC GROUP

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Technology plays a huge part in our lives. There is growing recognition of the ways that the technologies that we have come to depend on are a significant driver of the interconnected crises we are collectively facing — from ecological collapse to widening inequalities. At the same time, the interventions proposed by powerful governments, corporations, and institutions to address these crises tend to centre new technologies as the answer.

It seems like every day powerful actors design, develop, and pitch new tools, which they claim can fix the problems created by older tools. In our rapidly changing technological landscape, it's vital that we develop our own frames and strategies for understanding the implications of technologies so that we can be better informed of how to engage — when to uplift, when to challenge and resist.

This booklet is intended not to impose a framework, but to offer food for thought and to spark conversations within our movements.

WHAT IS TECHNOLOGY?

Technology tends to bring to mind high-tech digital objects (computers, smartphones, GPS systems). But something doesn't have to be high-tech or digital or complex in order to be considered a technology.

Technology can be defined as a useful set of techniques brought together into a system and sustained over time – often in a physical form. That could include basic items in our everyday lives – from clothes, to glasses, to pencils, to plows. It could also include intercropping systems or fermentation processes.

> **"Technology" derives from the word *techne-* and *-logos*.**
> ***Techne* means "a way of making or doing".**
> ***-logy* means "an expression" or "a body of knowledge"**

In short, a technology is a body of accumulated knowledge and expertise related to a specific way of producing or accomplishing something.

Technology can encompass multiple things:

→ **Technological process**
The process of bringing together techniques into a system for a purpose.

→ **Technological objects**
The objects created by the technological process.

→ **Technological knowledge**
The knowledge that makes the technological process possible.

→ **A technology**
A set of related technological objects and knowledge.

→ **Technological system**
The system of processes, objects, knowledge, developers, manufacturers, users, and the worldview that drive the technological process.

MICROCHIP

Let's take the example of a microchip, an extraordinarily complex technological object that runs so many of the digital technologies we rely on today.

The technological process

The processes by which fabrication plants melt and refine sand to produce silicon ingots which are sliced into tiny wafers, cleaned, polished, deposited with a coating of silicon dioxide, covered with a photosensitive chemical called a photoresist, exposed to ultraviolet light shined through a patterned plate, with certain areas etched and stripped away, overlaid with a thin layer of metal, and then etched again. Additionally, the processes by which all the raw materials are gathered to produce the microchips (as well as the raw materials for all the equipment needed to produce the microchips).

Technological objects

The resulting microchips produced as part of the process.

Technological knowledge

The knowledge of how to carry out every step of the process outlined above, including the knowledge embedded in the multibillion-dollar fabrication plants as well as the conditions necessary to sustain within those plants in order to produce flawless microchips (e.g. air cleanliness about 10,000 times cleaner than the outside air to prevent dust particles).

"Microchip technology"

The combination of microchips, and the machines and knowledge needed to produce them.

Technological system

The combination of microchips, the machines and knowledge needed to produce them, microchip designers, developers, manufacturers, marketers, retailers, and end users, and the belief that it's vital for information to be able to be transmitted rapidly through electronic mobile devices.

COTTON T-SHIRT

Now let's take the example of a cotton t-shirt, a seemingly simple technological object that many of us wear in our daily lives.

The technological process

The processes by which cotton is grown, harvested, processed, packaged, and transported, spun into thread, knit on a loom, dyed or otherwise finished, and sewn into a final product. Additionally, the processes by which all equipment needed along the way is created.

Technological objects

The resulting t-shirts produced as part of the process.

Technological knowledge

The knowledge of how to carry out every step of the process outlined above.

"Clothing technology"

The combination of t-shirts, and the machines and knowledge needed to produce them.

Technological system

The combination of t-shirts, the machines and knowledge needed to produce them, designers, manufacturers, marketers, retailers, and wearers, and beliefs such as fast fashion (the idea that the mass produced goods we buy are ways to represent our identity, and we should buy and discard clothing frequently in order to best reflect our individuality).

ASSUMPTIONS ABOUT TECHNOLOGY

We tend to be oriented toward technology in a few key ways:

→ **Technology Averse**
Technology is at the root of our problems, and the only true solution is to reject it whenever possible. For example:
• *"Technology is killing us, and is killing the planet."*

→ **Technology Neutral**
Technologies are not good or bad, it is the way they are used that determines their value. For example:
• *"Robots aren't replacing jobs; it's the lack of proactive measures to reskill and adapt the workforce to the changing work landscape that can result in job displacement."*
• *"Social media algorithms aren't inherently divisive; it's the people who exploit them for spreading misinformation and sowing discord."*
• *"Educational technology isn't diminishing the role of teachers; it's the individuals who fail to effectively integrate these tools into their classroom."*

→ **Technology Positive**
Technology defines progress and provides the solutions we need to solve all our problems. For example:
• *"Climate change can only be solved if we bring together the top scientific minds to create the technologies of tomorrow."*
• *"Hunger can only be solved if we produce more food through modern agricultural technologies."*

These frames can inhibit us from being able to fully understand the role technology plays in our lives.

We suggest an alternative:

→ **Technology Political**
Technological politics is a way of framing technologies as neither "good", "bad", or "neutral". It suggests that, instead, technologies are the products of deeply political processes, knowledge, and systems.

The politics of technology encourage us to ask more questions, like:

Who decided we needed the technology?	Who designed it?	Who is the technology designed for?
Where did the parts of the technology come from?	Who gathered the raw materials needed to build it?	What was the ecological impact of gathering those resources?
Who built the technological object?	Who implemented the technology?	Who owns the intellectual property rights?
Who has access to the technology, and who doesn't?	Who profits from the technology?	What practices did it alter or displace?

In this way, we can begin to engage with technologies as processes by which social, economic, political, and ecological relationships are negotiated and transformed. The political roots of that transformation lie in the purpose for which a technology was created.

INTENTIONS BEHIND TECHNOLOGY

Any technology starts with the idea that our relationship with the world *could* or *should* be something different. This idea is fundamental to human existence. At its essence, it's a process of reflection. Throughout time, communities have reflected, and come up with all kinds of imaginative proposals for what could be. This process has, in turn, led people to seek out ways to take action and experiment — whether that means inventing something new, or adapting something from the past, or altering something that currently exists. Innovation has historically been a slow, patient process. It's always been vital for communities to take time to understand what works and what doesn't given social and ecological contexts; what meshes and what clashes with their values and ways of living.

→ **Technology for the sake of wealth**
The drive to accumulate wealth, however, has redefined innovation. The need to entice investment and satisfy shareholders has driven companies and entrepreneurs to create technologies not as a response to pressing social needs, but instead as an opportunistic way to generate buzz. The addiction to technological development for the sake of profits has flipped the innovation model. In many cases, problems are manufactured retroactively to justify solutions. In other words, the idea for a technology comes first, and the notion of a "problem" is created by a company's marketing team in order to sell that product.

→ **Technology for its own sake**
While innovation has shifted due to profit maximisation, it has also shifted as a result of fixation on scientific progress for its own sake. The scientific sector is increasingly presented as its own world — a vacuum chamber, sealed off from social, economic, and political systems with one intention: to create new things. Within this atomised scientific culture, the question of *how things could be different* is given primacy, while the question of *why things should be different* is sidelined. Of course, the risk is that scientists end up creating powerful new things, without being asked to deeply consider the implications.

When we ask why a technology is developed, we are in essence asking about the "problem" a technology is designed to "solve". This "problem" is the true intention of a technology, and it may not always be what is publicly claimed. We can't truly understand the implications of a technology unless we unpack the intentions behind it.

Let's take the following three examples:

01 Segregation

Social scientist Langdon Winner writes about the implications behind the design of the low-hanging overpass bridges on Long Island, New York in the United States.[1] Winner points out that someone who has travelled around the U.S. would recognise that the Long Island overpasses are extraordinarily low. It could be easy to pass this off as the strange style preference of the designer.

But when we actually trace back the history of the overpass design, we find that Robert Moses, famed urban planner, built these bridges with a clear purpose — to inhibit buses from being able to pass underneath them (and therefore inhibiting them from driving the Long Island parkways). Winner cites evidence from Moses' biographer that Moses designed his overpasses in this way because of racism and classism. He wanted to ensure that only the (vast majority white) upper classes who could afford cars would be the population able to use the parkways, effectively segregating Long Island by race and class.

The basic use of Moses' overpasses is the same as if someone else had designed them (they carry cars from one point to another). The distinction with Moses' bridges was who was able to use the roads underneath. The political nature of the bridges came long before their use, because Moses designed the overpasses with a specific problem in mind (that "undesirable" groups might come to Long Island).

02 Undermining Workers

Technology doesn't just refer to objects — it can refer to processes, knowledge, and systems as well. As such, design doesn't necessarily just encompass the material form and function. Design can refer to ways that the systems in which people and objects co-exist are altered.

To illustrate this, Winner offers the example of a manufacturing plant in Chicago in the mid-1880s.[2] The owner of the plant, which produced reapers for harvesting grain, added pneumatic moulding machines to the factory. It's easy to assume that the owner, Cyrus McCormick, would have done so to increase the factory's efficiency and productivity, especially given the price tag (estimated at $500,000). But, citing historian Robert Ozanne, Winner states that adding the new machines was actually a strategy to deflate the power of the iron-moulders union. McCormick knew that the machines would produce inferior products than those produced by the skilled iron workers who were part of the union, and at a higher cost. But McCormick took the economic (and quality) loss for three years in order to be able to fire all the union members and replace them with less experienced workers to run the machines. After that period, during which the union was devastated, McCormick got rid of the machines and went back to using more experienced (formerly unionised) workers.

Unlike Moses, McCormick didn't influence the form of the technological objects — the pneumatic moulding machines — at all. His design was a system for decimating the struggle for workers' rights.

1 – 2 Winner, Langdon. (1986). *The Whale and the Reactor: A Search for Limits in an Age of High Technology*. University of Chicago Press.

03 Narrative Hacking

Sometimes, a technology only alters reality when it is built and implemented. Other times, a technological proposal alone can alter perception in ways that have profound implications.

In Ashlee Vances' 2015 biography on Elon Musk, the author discusses Musk's proposal for the Hyperloop, a radical new model of transportation involving pods propelled within a pneumatic tube at 800mph (almost 1,300km/h) using solar power.[3] Musk began discussing his idea for a Hyperloop that could take people from Los Angeles, California to San Francisco – a distance of around 382.01 miles (614.78 km), which takes around 7 hours to drive – in 30 minutes. He publicly introduced this concept at a time when California officials were planning a high-speed public railway to cover the same distance in 3 hours. According to Vance, Musk said that the Hyperloop was rooted in his "hatred" for the public transportation system proposal – a railway that, because of California's laws, would be the slowest train in the world, at the highest cost per mile. As soon as Musk started publicly discussing the Hyperloop, it went viral. Before long, the buzz around the Hyperloop had drowned out any excitement about the prospect of California's first significant public transportation endeavor in decades. The popular narrative became: 1) that the railway was a ridiculous, inefficient project stuck in the past, and 2) that the Hyperloop was an exciting, shiny opportunity looking towards the future.

Vance writes that, based on his exchanges with Musk, it seems clear that Musk had no real intention of building the Hyperloop. Instead, he simply wanted to challenge the public transit project. While Vance doesn't say it, it's not hard to believe that Musk did this in order to confront a perceived threat to his automobile business, Tesla. By creating a widespread backlash against the train, Musk effectively ensured that California stayed firmly tethered to private car and plane transportation as the main means of long distance in-state travel.

Elon Musk didn't need to implement, or even build, his technology in order to make a desired impact. Merely publicising the story of a potential new technology was enough to disrupt an existing system.

3 Vance, Ashlee. (2017). *Elon Musk: Tesla, SpaceX, and the Quest for a Fantastic Future*. Harper Collins.


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TECHNOLOGY AND POWER

As our society becomes more dependent on technology, the power to design, create, and implement the technologies we rely on has become more and more concentrated in the hands of the few. This is called technocracy.

The power of a technology rests on who defines the problem and the solution. Technocracy is the idea that the people and institutions that make the decisions governing our lives should be "experts" — those who have comprehensive and authoritative knowledge in a certain area. *Expert* is presented as a neutral term, but it is deeply political — rooted in our understanding of knowledge itself.

Throughout history, we've seen a shift in what is considered *knowledge*. European colonialism and hegemony erased Indigenous knowledge, practices, and world-views, leading to the decline of philosophy and the rise of "scientism". Today, in the so-called "Modern Era", science, engineering, and technology have become the three pillars of knowledge.

→ **Science**
An organised system of knowledge or study based on observation.

→ **Engineering**
The design and construction of systems and structures to solve specific problems.

→ **Technology**
The tools and knowledge created to solve those problems.

Of course, science, engineering, and technology, as defined above, are social, political, economic, and ecological processes of which communities have always been a part. Siloing these processes into distinct fields seeded the idea that they are separate from social, political, economic, and ecological systems. Today, these three fields are defined and legitimised not by communities and their lived experiences but by institutions and their power. And so, in our technocratic world, an "expert" is someone who is given power by the powerful to define "problems" and shape "solutions".

Experts have in turn fostered the belief that problems in the world are technical — not political. By extension, local histories, contexts, and struggles, are unimportant, or at least less important than their technical knowledge. "Expertification" has steadily devalued the knowledge that communities themselves hold, suggesting that distant individuals and institutions are more capable of defining reality than those who face it every day.

THE GREEN REVOLUTION

This is an example of a political problem presented as a technical problem. Post World War II, the U.S. government and powerful institutions like the Rockefeller and Ford Foundations united as part of a mission to "feed the world". They saw a dire need to confront the issue of hunger, given the rising population. The Green Revolution framed hunger not as a symptom of impoverishment, but instead as a result of low food production tied to small-scale farming. The approach was to "modernise" agriculture by increasing yield and "freeing" farmers from the field (so that they could pursue higher paying jobs in urban cities). The strategy proposed was to shift farmers over to larger-scale industrial monocrop production, replacing local seed varieties with new "high-yielding" corporate hybrid varieties and synthetic chemical fertilisers.

The Green Revolution's fundamental focus was on increasing food production. This was the problem that institutional experts identified. Nearly all of the dominant initiatives to solve hunger today, likewise, focus squarely on increasing food production. However, there is currently enough food produced globally today to feed 10 billion people [1], nearly 1.5 times the world's population, while over one billion people go hungry.[2] Clearly, the problem is not food production.

The Green Revolution is heralded by many for "saving humanity", but today even the institutions at the centre of the initiative are willing to recognise the widespread environmental harm it has caused (not to mention the social and economic harm). As Nick Cullather writes, "... President Jimmy Carter's Global 2000 report found the green revolution left long-term trends in food output unchanged while making future gains more dependent on petroleum." [3]

The Green Revolution framed a complex issue (hunger), which is deeply connected to localised realities related to economic inequality and political disenfranchisement, as a standardised, scalable fix. The farming communities who for decades spoke out against the Green Revolution's imposition of industrial agriculture were silenced or ignored, branded by "experts" as anti-science — accused of standing in the way of progress. Today, the institutions behind the Green Revolution are finally reckoning with (at least some) of its consequences, yet rarely do those same institutions acknowledge the inherent flaws in their approach.

1 Eric Holt-Giménez et al. (2012). "We Already Grow Enough Food for 10 Billion People ... and Still Can't End Hunger". *Journal of Sustainable Agriculture.*
2 Hickel, Jason. (2018). *The Divide: Global Inequality from Conqest to Free Markets*. W.W. Norton & Co.
3 Cullather, Nick. (2013). *The Hungry World: America's Cold War Battle against Poverty in Asia*. Harvard University Press, 249.

RETHINKING INNOVATION

At the heart of technocracy is the idea that only “experts” innovate. We know that this is not true — communities everywhere have shown that they are more than capable of innovating. But in popular culture, “innovation” has become synonymous with “high-tech product”. Every day, corporations market their new “innovations” to us. But what if we reframed innovation not as a product, but as a process? What would it look like if we outlined the ways in which innovation is carried out?

Let’s look at three different case studies of technological innovation →

CASE STUDY 01 GOLDEN RICE

Let's take the example of Golden Rice, a genetically-modified rice variety that's become the "poster child" for biotechnology.

Impoverished communities around the world are forced to subsist on single-crop diets. For communities across Asia, rice is the main staple food. However, unlike other staple crops, like maize, wheat, or potatoes, rice lacks beta-carotene, the chemical that triggers Vitamin A production. As a result, it's typically eaten with other foods (e.g. vegetables and meat-based proteins). But for communities who can't afford those other foods, they don't get the beta-carotene (and therefore Vitamin A) needed to survive. Vitamin A deficiency (VAD) is widespread, affecting hundreds of millions of people. In the most severe cases, VAD can cause immune deficiency syndrome and blindness.

In 1984, scientists put forward the idea for Golden Rice as a way to solve the problem of Vitamin A deficiency. Their concept was to use genetic modification to fortify rice with beta-carotene. Golden Rice research and development has been based at the International Rice Research Institute (IRRI) in the Philippines, and funded by the Rockefeller and Gates foundations.

In 2000, Golden Rice appeared on the cover of *Time Magazine*, with the headline, "This Rice Could Save a Million Kids a Year." Proponents of the GM grain claim that a bowl of Golden Rice can supply 50 percent of a child's required Vitamin A intake.

But Golden Rice testing raised red flags right away. For one, IRRI's own data suggests that Golden Rice's beta-carotene content is extraordinarily low when compared to other food sources and decreases rapidly after only weeks in storage.[1] Even if it did have high beta-carotene levels, it wouldn't account for a few key realities. For one, intestinal infections and parasites (which can be widespread in impoverished communities) can prevent beta-carotene absorption. Additionally, the body can only absorb Vitamin A if it has sufficient fats. Even at its best, the beta-carotene in Golden Rice would only be able to be processed by a well-nourished individual.[2] For a malnourished person with low body fat, the Golden Rice would need to be cooked with oil, which that person would likely be unable to afford. Golden Rice has also suffered from "yield drag".[3] In other words, when compared with seeds that are identical except for the beta-carotene trait, Golden Rice produces a lower yield.

In 2014, eleven years after *Time Magazine* proclaimed Golden Rice a saviour, IRRI itself stated, "it has not yet been determined whether daily consumption of Golden Rice does improve the vitamin A status of people who are vitamin A deficient".[4]

Millions of dollars have been poured into Golden Rice research and development to solve a specific problem: Vitamin A deficiency. But in the Philippines, where those efforts have been centred, VAD has already been significantly decreased through conventional nutrition programs. Data from the Philippines National Nutrition Council shows there was a significant decrease in VAD cases between 2003 and 2008, where incidence of VAD in children aged 6 months to 5 years-old dropped from 40.1% in 2003 to 15.2% in 2008.[5] In the case of pregnant women, the incidence dropped from 17.5% to 9.5% and for lactating mothers from 20.1% to 6.4%.[6]

1 – 6 Glenn Davis Stone and Dominic Glover. (2016). "Disembedding grain: Golden Rice, the Green Revolution, and heirloom seeds in the Philippines". *Agriculture and Human Values: Journal of the Agriculture, Food, and Human Values Society.*

To summarise:

1. Golden Rice has been shown to carry low to negligible beta-carotene content, which degrades rapidly.
2. Beta-carotene absorption is inhibited by factors (e.g. parasites and low body fat) caused by impoverishment that the grain does not address.
3. Golden Rice yields less than comparable seeds, with a higher economic and environmental cost to grow.
4. VAD is already being reduced significantly through other programs.

Farmer-led organisations have raised these issues time and again over the past decade-plus, in addition to a broader concern: that Golden Rice, which is patent-controlled by ChemChina-Syngenta, one of four companies who currently control half of the global seed market, poses an opportunity for massive transnational companies to further concentrate economic power.[7] Their concerns have been consistently dismissed, or actively demonised as efforts to withhold a live saving cure from suffering communities. Despite these issues, Golden Rice commercialisation has moved ahead.

Innovation Process

What would it look like if we traced the innovation process of Golden Rice?

It might look something like this:

1. Rural Filipino communities are suffering from VAD.
2. These communities rely on a single-crop rice-based diet due to their low incomes.
3. The solution is to find a way to create a rice variety capable of delivering Vitamin A.

Innovation Process (Reimagination)

What would have happened if we reimagined the innovation process, centring the voice of the communities who have continued to raise concerns around Golden Rice?

It might look something like this:

1. Filipino farming communities have consistently identified impoverishment, hunger, and malnourishment as widespread issues, of which VAD is a symptom.
2. Those same communities continue to make clear that impoverishment, hunger, and malnourishment is caused primarily by economic policies that have liberalised the Philippine economy, removing import tariffs on goods from rich countries. Cheap, subsidised foods have flooded Philippine markets, making it impossible for Filipino farmers to make a living.
   - A. This issue is exacerbated by the Green Revolution, an effort led by IRRI, the same institution leading Golden Rice development, which pushed farmers away from diverse, locally-adapted crops and towards expensive, chemically-intensive corporate monocrops.
   - B. The issue is additionally exacerbated by immensely unequal land access, forcing them to be subject to usury (exorbitantly high rent) in order to access farmland.
3. The solution is to put in place economic policies that allow Filipino farmers to 1) get fair prices for their crops, so that they can either afford to grow wider varieties of crops and/or afford to buy foods in order to meet their nutritional needs; and 2) get access to land without being subject to usury.

7 ETC Group. *Food Barons 2022.*

CASE STUDY 02 THE MECHANICAL TOMATO HARVESTER

Let's take an example of a mechanical technology.

Harvesting crops can be a slow and arduous process. In the late 1940s, agricultural researchers designed a mechanical tomato harvester to efficiently harvest a row of tomatoes by cutting, picking, and sorting the fruit. The issue with the mechanical harvesters was that they were a lot rougher on the tomato plants than the gentle hands of the farmworkers, and caused a lot more damage to the tomatoes.

Rather than consider whether the technology (the harvester) was the best fit for the environment, researchers moved forward with the assumption that it was the environment that needed modifying. They began breeding new tomato varieties that were "hardier and sturdier".[1] The new, more "resilient" tomato varieties they bred were "less tasty", sacrificing flavour for sturdiness.

A study claimed that the harvesters could save growers money. But the machines had a prohibitively high cost (more than $50,000 each), so they only really made sense for "highly concentrated" industrial tomato growing.[2]

The effects were three-fold:

1 Despite their drawbacks, the sturdier tomatoes started to become widely grown.
2 Industrial farms started replacing farmworkers with mechanical harvesters.
3 As industrial tomato farms using the harvesters began producing more fruit at a lower cost, they ran smaller-scale farms relying on harvesting by hand out of business.

Winner writes:

"With the introduction of this new method of harvesting, the number of tomato growers declined from approximately 4,000 in the early 1960s to about 600 in 1973... By the late 1970s an estimated 32,000 jobs in the tomato industry had been eliminated as a direct consequence of mechanisation." [3]

Innovation Process

The innovation process of the researchers responsible for the harvester might look something like this:

1 Tomato farmers aren't making enough money.
2 This problem is the inefficiency of current tomato growing.
3 That inefficiency stems from the pace and cost of farmworkers.
4 A mechanical harvester can improve efficiency by replacing farmworkers, thereby cutting down on labour costs and maximising profit.
5 A harvester can't fully work with current farm fields and tomato varieties.
6 The solution is to change the fields and varieties to accommodate the harvester.
7 A harvester is too expensive for small-scale growers.
8 The solution is to scale-up tomato growers to fully realise the profit potential of the harvester.

Innovation Process (Reimagination)

If we instead centred a potential farmer/farmworker perspective, it might look like this:

1 Tomato farmers and farmworkers aren't making enough money.
2 This problem is caused by a lack of government policy regulating the price of tomatoes. Without a system of parity, the cost of farming continues to increase at a rate disproportionate to the selling price of tomatoes.
3 The solution is to implement policies/laws that restore a system of parity, so that farmers growing at different scales can sustain their livelihoods.

1 – 3 Winner, Langdon. *The Whale and the Reactor*, 26.

CASE STUDY 03 FACEBOOK

Finally, let's take an example of a platform that, over the past two decades, has come to define the ways in which we communicate with each other.

In 2003, 22-year-old Harvard University student Mark Zuckerberg created a website called FaceMash. He built the site, which allowed students to vote on the attractiveness of other students, by illegally hacking into Harvard's internet servers and downloading student photos without their permission. The college shut it down. Zuckerberg took the same basic idea (a social networking site for students) and, in February 2004, launched "The Facebook" at Harvard. Its popularity quickly grew and the site expanded to other college campuses, and later to high schools. By December 2005, the site had 1 million users.

In the following years (2006 and 2007), Facebook faced a string of controversies. They added elements that gathered data from users without their knowledge and broadcasted a user's activities without their consent. These elements, like the News Feed and an advertising system called Beacon, drew immediate outrage from users, who called out the company for violating their privacy. As Facebook's missteps continued, communities and watchdog organisations called for the company to be regulated.

The narrative around Facebook changed in December 2010, when a political protest in Tunisia set off a wave of unrest and regime changes across Egypt, Bahrain, Yemen, Libya, and Syria (often referred to as the "Arab Spring"). The story quickly spread that it was Facebook that had enabled movements to organise, suggesting, as one journalist puts it, that these platforms were "a force for freedom and democracy". This narrative, of course, failed to capture the fact that in the wake of the Arab Spring, as governments supressed dissent and violently shored up their regimes, Facebook and other social media companies worked with leaders to suspend, remove, or otherwise silence social media accounts of dissidents.

In October 2012, Facebook's active usership reached 1 billion. In 2017, it hit 2 billion. (As of March 2023, that number is almost 3 billion.)

In March 2018, the story broke that a data analytics firm called Cambridge Analytica had harvested data from more than 87 million Facebook users – mostly registered U.S. voters – to build an algorithm that could, as a Guardian reporter writes, "predict and influence choices at the ballot box". Reporting uncovered that Facebook had known about the data extraction, but had done nothing in the two years prior to the exposé, save for sending a letter to Cambridge Analytica. In that time, the data obtained was used to target voters in two U.S. campaigns – one of which was Donald Trump's. The revelation sparked mass outcry, and accusations of Facebook threatening democratic governance. The shocking reality was that Cambridge Analytica's actions had not actually constituted a "breach"; they were allowed within the scope of Facebook's platform. In April 2018, Mark Zuckerberg was forced to testify before U.S. Congress.

Facebook, now rebranded as Meta Platforms, has continued to leave a trail of controversy in its wake, at the same time as it continues to grow, buying up social media giants Instagram and WhatsApp, and becoming one of the world's most valuable companies.

Innovation Process

Because Facebook's rise and ever-expanding scope is in many ways unprecedented, it's difficult to trace what their innovation process might have looked like. However, a few things about Facebook's development seem clear:

1. Facebook, like many up-and-coming digital platforms, is free for users. It started small in scope, and expanded as its base grew, in order to keep people on the platform and attract new users.
2. Because Facebook is a private company with shareholders to satisfy, the rising costs of growing and maintaining the platform meant that they had to seek ways to monetise.
3. They could have charged a subscription fee to use the site, but instead they chose to keep the platform "free" and rely on advertising to generate revenue, either because they didn't want to alienate users or because they saw more profit potential in ads.
4. As more and more people began using Facebook in more extensive ways, its user base effectively provided the company with a massive amount of data on their behaviours.
5. This data positioned Facebook as a gold mine for marketing, with the ability to offer other companies hyper-targeted ad placement in a more precise and thorough way than they had ever before.
6. This data became Facebook's greatest asset, and its greatest risk. Aside from the ways in which corporations have become ever more capable at pushing us towards compulsive consumption, Cambridge Analytica showed that those with a knowledge of how to access that data could use it to undermine entire political systems.

Facebook, and so many other data and algorithm-driven platforms that have come since, has masqueraded as a public good – a gift to humanity, allowing us to connect with each other, learn from each other, to organise and mobilise. But they can only grow and profit by gathering and selling information about us, whether by actually selling our data itself or by selling advertising.

Critical discourse around data rights is relatively recent. It's taken time for civil society to catch up to the implications of the massive data harvesting happening every second we spend on platforms like Facebook. But one way of thinking about our relationship to these "free" platforms is: we aren't the user; we are the product.

Innovation Process (Reimagination)

What are some other ways that Facebook's platform could have been developed?

→ What if governments recognised that Facebook's tools were important for their constituencies to communicate with each other, and decided to make the company public?
→ What would it mean if the platform were then run by national governments with centralised servers?
→ What if it were run by local governments with local servers?
→ What if Facebook remained private, but was mandated to stop using data to generate revenue?
→ What if they switched to a subscription-based revenue model, where users would pay a fee to use the platform?
→ What if governments regulated the amount of data that companies like Facebook can hold on their servers?
→ What if they were taxed for storing anything over a certain amount?

TOWARDS TECHNOLOGICAL POLITICS

Today, we are surrounded by powerful technologies that have made their way into nearly every aspect of our lives. It can feel as though technology is something beyond our capacity to understand, to assess, and to control, and it can be tempting to take a binary stance on technology itself — to brand all technologies as either good or bad. But what if we shifted towards the stance that *all technology is political*? What if we recognised that every technology has the potential to give power to some, and take away the power of others? And what if we understood the root of that power as the ability to define how we should exist on this planet?

Earlier, we shared some different ways to think about "technology". Often, discourse focuses on specific technological tools and what they do (or claim to do). But material form and function is only a small part of what a technology is. Technologies are the product of social, economic, political, and ecological processes. The processes that shape technologies can help create technological systems that disrupt and alter society in profound ways (e.g. the systems of digital communication that platforms like Facebook have ushered in). Pat Mooney proposes a simple theory:

> "A powerful technology introduced into an unjust society will always increase the gap between the powerful and the powerless."

Any technology starts with someone putting forward their understanding of the world, and how/why it could/should be different. Over time, as those in positions of control have claimed knowledge and expertise as their domain, we've seen a devaluing of communities' ability to describe their own reality. Increasingly, problems have come to be defined by actors and institutions further and further away from the people experiencing them. The solutions to these problems have become standardised and scaled, claiming to apply to vastly different cultures and contexts. The effect is that communities are put in a position where they are forced to try to understand and assess technologies that are introduced to, or oftentimes imposed upon, them — to gauge the implications and effects of tools they had no part in developing. The process of attempting to learn everything needed to assess a given technology can feel futile — partly because of how complex a tool can be, partly because of the fact that the decision-making and intentions behind a technology is often hidden.

Leaning on Mooney's claim, products reflect processes, and as long as the innovation process remains centralised and homogenous, we will continue to see technologies that centralise power. In order to realise the need for decentralised, diversified, and distributive technologies, we'll first need to organise and advocate for decentralised, diversified, and distributive processes. In other words, the starting point for our struggle is not what a technology does, but who has the right to control the steps that led to its creation. Langdon Winner puts forward a concept of what a more equitable process could look like:

> **"Faced with any proposal for a new technological system, citizens or their representatives would examine the social contract implied by building that system in a particular form. They would ask, How well do the proposed conditions match our best sense of who we are and what we want this society to be? Who gains and who loses power in the proposed change? Are the conditions produced by the change compatible with equality, social justice, and the common good? To nurture this process would require building institutions in which the claims of technical expertise and those of a democratic citizenry would regularly meet face to face. Here the crucial deliberations would take place, revealing the substance of each person's arguments and interests. The heretofore concealed importance of technological choices would become a matter for explicit study and debate." [1]**

This effort to assert our right to analyse and evaluate the conditions created by technological tools and systems is the work of technological politics. It is, like any political struggle, a negotiation of visions and values for the world we want to see for ourselves and for future generations. It is just as messy and complex a struggle as any other. But it can begin simply: by first claiming back our power to define and re-embed technology within our narratives and our lives.

We hope this briefing is a start.

1 Winner, Langdon. *The Whale and the Reactor*, 55–6.

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