



The State of Responsible IoT 2019

Small Escapes from
Surveillance Capitalism

THINGS

Challenge the Status Quo.

(Zuversicht)

ThingsCon Report: The State of Responsible Internet of Things 2019

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Editorial

The individual in the western society of affluence has become accustomed to the fact that everything revolves around the fulfilment of one's own needs.

2019 is the year where the term "Surveillance Capitalism" really took root. It is not necessarily the year where the dams broke and some dramatic event pronounced the arrival of dystopian reality, but perhaps the year where progressive deterioration and the introduction of this term, Surveillance Capitalism, by economist Shoshana Zuboff, has made it clear that 1984 has not just arrived: We might already be past it.

In the field of Design and Technology the development came creeping and was packed in the supposed advantage of the user-centred design. Whereas in the 1990s it was a question of putting the user at the centre of the development of digital products, this well-intentioned philosophy today poses a threat for both individuals and the society in which these individuals live. The individual in the western society of affluence has become accustomed to the fact that everything revolves around the fulfilment of one's own needs.

The digitization of products, services and processes enables the constant and completely unnoticed observation of the user by software. And it does not stay with classic software. By integrating the digital in our entire habitat – the networking of everyday objects in our offices, homes, even cities – a complete and lifelong data profile of a person can be generated.

In its essence, Surveillance Capitalism describes the current economic model of technology companies that make revenue by surveilling our online lives, gathering data that is processed and transformed to result in targeted advertising packages. The better the data, the more likely it is that we do what is expected of us: buy what we are shown. Surveillance Capitalism is therefore not only an economic model, it is a form of control over our behaviour.

It's not that users do not know that their personal data is the currency to reach their convenience – but most do not know the price or don't want to know it as they are addicted to the convenience offered by tools made with this data. It's not that companies do not know secretly, that they should not turn customers into victims, they can exploit – they just cover themselves with the fig leaf of state-of-the-art user orientation and digital disruption. It seems like we have, in our imperturbable confidence in the societal progress by technology and market-economy, produced the same unhealthy mutual dependency as of a drug dealer and its customer.

The irony is that technology – applied with social responsibility – can still solve a lot of existing problems, but this perspective often is taken only into account by companies, if it pays off. Indeed, many eyes were looking towards the European Union, which, after a long struggle, in 2018 enforced the GDPR (General Data Protection Regulation),

a trans-national protection of personal data. But the only result that can be seen so far is information on websites: “We use cookies. Here we have a complicated text for you that fulfils the sole purpose of legally bringing our informational liability.” As important as this ordinance is, it also shows the powerlessness of a united state system characterized by a social market economy. In November 2019, digital rights activist Aral Balkan urged attending EU-parliamentarians to ensure that Europe does not become an Ferengi alliance, pointing out that it is not just about the fight for transparency towards users, but simply about the fact that companies and states should not be allowed to use the identity and property of citizens to enrich themselves exclusively. (Ferengi: An exclusively economically interested extra-terrestrial species in the series “Star Trek Next Generation”).

So, what if the great and powerful of our political and economic world find no way to understand the problem and to eliminate it consistently?

We are looking for small escapes that show us a way out of surveillance capitalism that can be implemented for all of us.

So, what if the great and powerful of our political and economic world find no way to understand the problem and to eliminate it consistently? With this year’s edition of RIOT Report – State of Responsible IoT, we are looking for small escapes that show us a way out of surveillance capitalism that can be implemented for all of us. How to solve the wicked problem of designing and developing for our digitally entangled lives, with respect for the dignity and sovereignty of individuals and societies? With ThingsCon we have devoted ourselves to working towards a “responsible IoT”. But what does that look like in the light of Surveillance Capitalism? In order to understand not only the problem, but also to offer small escapes from the current dilemma, the authors of this issue deal with the following key questions:

Who takes responsibility in this situation – or who should do it?

- **Whose interests should technology serve?**, by Kasia Odrozek
- **Balancing Urban Innovation with a Responsible Approach to the Internet of Things: The Case of Limerick**, by Helena Fitzgerald, Gerard Walsh, Gabriela Avram, Stephen Kinsella & Javier Buron Garcia
- **Ushahidi: Responsibility for Human Rights**, by Eriol Fox

What is needed to enlighten users and change them to self-determined consumers again?

- **YOU**, by Elina Faber, Sarah Lerch, Jan Meininghaus & Domenika Tomasovic
- **Zuversicht – Challenging the Narrative**, by Philipp Kaltofen, Julia Metzmaier & Anne Schneider

Do we have to change the role of design?

- **Sex and Magic in Service of Surveillance Capitalism**, by NamrataPrimlani
- **Surveillance (Alternatives), by Design**, by Heather Wiltse

- **Design Me a Pause Button,**
by Irina Shklovski
- **The alienating consequences of things that predict,**
by Iskander Smit

How can we achieve trustable technology?

- **Trusted technology from your living room to your city,**
by Peter Bihr

If nothing else helps – how can we trick the surveillance system back?

- **Civil Hack Back: Hack, tweak, delete your digital CV!,**
by Timo Jakobi

We would like to thank our wonderful authors of this issue. Indeed, a “best practice” model to oppose Surveillance Capitalism does not exist yet. But we are convinced that we need a discussion about how we want to live in the future, supported by technology that allows for our self-determination and a respectful coexistence with society and nature. With this report we would like to open that discussion about the consequences of Surveillance Capitalism and how the IoT community can oppose them.

Editors



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Whose Interests Should Technology Serve?

It might seem like the question lacks nuance but how would you feel if we replaced “technology” with “electricity”? The way we experience tech and IoT in our lives these days – at home, in cities, or even on our bodies – requires us to put on a new lens when looking at those who make it and the powers at play. If commercial entities take over areas traditionally understood as public, such as mobility or public debate, wouldn’t we need to rethink the rules the online economy runs on to fit the new social dependencies?

“When the Amazon Kindle was released, their ebooks didn’t work with commonly used screen readers, making accessibility difficult for the blind community. The National Federation of the Blind (NFB) (Homepage NFB) in the United States campaigned to change this for years, in vain. Then Amazon won a \$30 million USD contract with the New York City Department of Education in 2015 to create an ebook store for educators in 1,800 schools. City schools delayed a final vote (Molnar, M., 2015) until Amazon and the NFB came to an understanding. Since then, the Kindle now has a built-in screen reader and Amazon has improved accessibility across many products.”

This is a story we told in Mozilla’s 2019 Internet Health Report (Mozilla, 2009a) in an article highlighting the potential of cities (Mozilla, 2009c) as new champions for digital rights. The outcome of this battle was a win for children and educators in New York, but also for people around the world. A million-dollar procurement contract and a commitment to serving the public interest helped persuade a giant corporation to change their revenue-driven mindset in this case.

Cases like this illustrate the question at the heart of the tech debate these days: whose interests should technology serve? I am aware that any questions around remodelling economy demand nuance and historical memory. I still think it’s more important than ever to ask them, even if fast answers won’t do the trick here. At a time when over half of the global population is online (Mozilla, 2009b) and the internet has become so “general purpose”, more and more commercially-owned services have taken on the role of public utilities without fully assuming the responsibilities that come with it. But should every tech be social good tech?

The traditional incentive in business, the maximization of revenue, often drives results and product decisions well beyond social good goals, but then again, making a profit is inherent to doing business and foundational to economies.

At a time when over half of the global population is online [...] more and more commercially-owned services have taken on the role of public utilities without fully assuming the responsibilities that come with it.

At the same time the definition of 'social impact tech' broadens quickly, when we consider what an outsized impact our daily tech has on our wellbeing, relationships, finances or chances of advancement in life. Once purely a technical domain, the internet is now part of our social fabric and the online economy is driving painful social consequences that we just recently started waking up to. We all know the sins of the tech companies these days: hungry for ad revenue, they exploit our data, lure us into dark UX patterns, rush algorithmic solutions that seem to do more harm than good. Is it really so naive to strive for both a sound business plan and a genuine vision to, for lack of a better expression, "make the world a better place"?

It feels important to define our aspirations for the human experience of the internet and not to just "go with the flow" because of how it's always been. A healthy society needs a healthy technology sector, and it can't just be the job of understaffed and underfunded NGOs to think about how to encode societal values in technology. We need all sorts of people thinking about and building technology aimed at providing broader benefits than financial return to shareholders.

In order to advance the understanding of how we can shape a future that is beneficial to our societies we need (at least) three things to happen.

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3 Tips to Escape Surveillance Capitalism

Restore Trust

Local civic tech communities can and should play a vital role in bridging the still persisting cultural gap between administrations and citizens

Who is best positioned to restore and expand citizens' rapidly collapsing trust in tech? Governments, cities, and civil society are natural hubs for such trust: their mission and reason for existence, by design, is to represent the interest of the public (with the disclaimer that all such actors, and especially governments, need to be kept in check by the people). They have the mandate but what they also need (and often lack) is the competence.

Governments, city administrations, and advocacy groups need experienced and talented technologists to transform the way they work, face the inequalities and exploitation arising from technological change and frankly, shape that change by either creating regulatory and supportive environments for innovation or leading the innovation themselves. Local civic tech communities can and should play a vital role in bridging the still persisting cultural gap between administrations and citizens. Coalitions such as Cities for Digital Rights are a great way to advance such developments, either by learning from each other or inspiring a common commitment to incorporate human rights principles into the digital services they control or oversee. Working together with aggressive commercial tech companies who drive "smart" developments and occupy more and more space in our

daily urban environments is another challenge for the public administration but if done right, it could be turned into an opportunity to define and reshape the relationship in a way that benefits citizens. For example, opening and using vast, but often closed, mobility databases from Google, Uber or e-scooter companies could help answer policy and research questions in cities. But such data sharing agreements need to be carefully designed with a good understanding of what “public interest” means, and a deep consideration of any bias and privacy concerns that this kind of data collection might entail. Debates like the one around Sidewalk Labs in Toronto, although often unnerving, help engage multiple stakeholders in a discussion on how to govern the new public-private marriage of urban tech.

Rebalance Power

Restoring trust via public institutions and civil society is not enough. There is a systemic power imbalance encoded in the commercial world of tech that needs to be challenged. Who is building for whom, and what are the incentives at play?

The power imbalance and accountability crisis between those who create value as users and those who make the decisions is today inseparable from the social challenges we are facing with rapid technology expansion. How do we create the right incentives that put people first in business?

Civil rights groups and politicians are increasingly demanding regulation of tech and breaking up monopolies, but this is not enough. We need the business world itself to change.

In our current capitalist system, there is very little wiggle room for a “people before profits” approach, unless it is implemented by design. In order to succeed, such a design would need not only founders’ good intentions, but also clear business incentives aligned with funders, business models, and corporate governance structures.

In a world focused on the prestige and scale of investments that come with traditional Venture Capital funding, this is not an easy task, but a movement is emerging. Models like platform coops, steward ownership, and the Zebras Unite movement deflect pressures for exponential growth and exploitation of the people generating value. They honour agency, inclusion, and democratic ownership and above all, incentivize sticking to the original mission.

At the same time, in big tech employees organize to exert pressure on their leadership, demanding more transparency and ethical decision making. Earlier this year, more than 6,000 Amazon’s employees from every background and department signed a shareholder resolution to adopt a company-wide climate plan and ban the company’s sales of facial recognition tech to governments. The resolution was voted down but it was an impor-

tant signal that ownership – even, in this case, a minority vote – is a powerful path to express voice, especially if the voices unite.

Shape the Mindset

When we think about business schools or computer science degrees, meaningful education about the consequences of pure commercialization of technology is still missing in most curricula. We need more than Black Mirror (Black Mirror, 2019) episodes, preachy events, and scary news headlines.

For many years employees in tech companies held the belief that technology equals progress and its distribution will obviously be good for society. It's hard to blame them entirely. This is what most of the startup-enamored world believed and what the media constantly echoed: investments of hundreds of millions of dollars and bombastic events celebrating yet another unicorn disrupting yet another area of life that wasn't up to speed with the technological potential.

Initiatives like tech employee organizing prove that this belief is eroding, slowly giving way to a more genuine, investigative interest in understanding the impact of tech on a broader level.

But why work tirelessly to change the industry's mindset if we could teach a healthy mindset from the start? When we think about business schools or computer science degrees, meaningful education about the consequences of pure commercialization of technology is still missing in most curricula. We need more than Black Mirror (Black Mirror, 2019) episodes, preachy events, and scary news headlines. Programs like the OpenDoTT PhD on responsible IoT (OpenDoTT.) or Mozilla's Responsible CS Challenge (Responsible Computer Science Challenge, 2018) are a step in the right direction but not enough. Ideally, the education needs to start at the very beginning, when our future leaders and makers start jotting down their first algorithms. We need to educate them that code, design and business models are a powerful mix, that they are political and have real social consequences. We can and should embrace the notion that we can change how we build businesses, educate people and build governments, offline and online. After all, the internet belongs to all of us, and the way we treat each other today will determine how we'll live tomorrow.

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Ushahidi: Responsibility for Human Rights

Eriol Fox

Technology for human rights has come a long way. What responsibilities does it now have to ensure citizens are safe and promote peace?

Mission

Ushahidi, which means “testimony” in Swahili, defines itself as a platform: a technology platform, a platform for expression a platform for connection, a platform for understanding, a platform for globalized views on subjects, causes, needs, and human rights endeavours.

Ushahidi is a technology leader in Africa, headquartered in Nairobi, with a global team. It is a social enterprise that provides software and services to numerous sectors and civil society to help improve the bottom up flow of information.

But Ushahidi is more than the tech that it has built. It embodies a view, a standpoint that your voice has power, your needs are worth meeting and that your journey, your struggle to exist safely in the face of immense corruption, violence and abuses is not only valid but to be protected as your fundamental human rights and elevated to those who might exist in privileged positions where it is easy to remain ignorant.

The origin story of Ushahidi, if unknown to you, starts with the three founders and the 2007/2008 Kenyan elections. When the country was facing one of its first democratic election cycles and corruption, coercion and violence were growing, the founders created a platform where the most marginalized in Kenya could have space to voice their needs, experiences concerns and the violence and violations of human rights that were taking place around them. The tool was built with the inherent knowledge of the barriers to communication most people in the developing world have. As a result, SMS (text messages) was an integral way in which to report to the Ushahidi platform.

Since that initial use, Ushahidi’s tools have been used globally for crisis response, gender-based violence resistance, democratic violations, refugee’s documenting their journeys and human rights activism. Ushahidi’s data collection platform, and tools like Ushahidi, have made activism online accessible by those living in the harshest of environments where official power is wielded by the few and measured out in small amounts to those of worth.

Risks

But tools like Ushahidi’s exist in a delicate balance with surveillance capitalism, NGO global politics and citizen activism. In a way, Ushahidi as a data collection tool/platform has made data about, gathered and managed by marginalized people precious and commodified in complex ways. These tools and organizations have provided the tools and

developed the ways for communities orbiting the fringes of the tech world the ability to become 'commercially' viable or 'capitalistically' valid.

Herein lies an issue with open source tools for activism [...] there's potential [...] to migrate away from a community-building, marginalized voice raising tool for free-speech across borders and social barriers.

Herein lies an issue with open source tools for activism. Regardless of the intention, history or intended usage, there's potential for the tool, or the way that the tool is used to migrate away from a community-building, marginalized voice raising tool for free-speech across borders and social barriers. The intention with digital tools human rights was that of an equalizer. A method to which rich and poor, rural and urban were able to surface issues with the potential anonymity and removal of many social or characteristic signifiers that the digital world offers us.

But as with all such things, the way that communities or human subvert the use of a certain platform or tool is dependent on the communities of interest that gather and grow there and how that space is (or is not) maintained or moderated. There are many cases of Ushahidi's tools being used in less affective ways, for monitoring from a large (or small) organizational capacity where the intentions can initially be noble, that of helping with a crisis or human rights violation. But that in some ways, move away from the original use of the tool as a way to express your authentic voice as a citizen or a member of a community. The organizations rarely have the intention to harm or monitor in order to control as many a digital citizen has been told 'data is the new commodity' information is empowerment but in the hands of who? And under the control or protection of who?

As less and less ordinary citizens, especially those who have the time and privilege to 'manage' or understand their data and rights therein, come to offer data (personal identifying or opinion based) as an 'entrance fee' to access the wider connected world, how are we as citizens and creators of tools ensuring that the original purposes of tools like Ushahidi are being upheld, decreasing barriers, exposing human rights abuses, ensuring safety and empowering people to be part of the improvement of their local, national and international world.

Learnings and Hints

So, what does activist created IoT like Ushahidi need to do in order to be responsible and accountable? Especially when it becomes coveted by international organizations, governments, and for-profit companies?

7 Tips to Escape Surveillance Capitalism

The ability and the intention to listen to an existing or growing community and offer that community accessible ways to communicate to the technology 'owners'. Offering clear pathways to involvement in your tools or processes that empower first and ask of the community second.

Community Responsivity and Responsibility

These are citizens that care, humans that have a cause and a need for tools that help them fight oppression in their homes and countries. If your intention is to 'service' than 'empathise' and build connections then you do your fellow humans a disservice.

Genuine Connection to the People That Use a Tool

Opening up to the global population is a terrifying prospect for most commercial (and non-profit) entities. The threat of criticism, of difference in opinion, of practices, funding, scale and inclusion are realities that can seem easier to hide from than to open up to. By working out in the open you are actively signalling your responsibility to other humans that use what you've built and inviting them into the processes in which to raise their voices that first better these tools you build and second hold structures (government, big data, big tech etc.) accountable. With openness and transparency comes difficult, but also a sense of freedom and inclusion that few other processes can hope to achieve. A great first step to tech tools is Open Roadmaps.

Open It Up

The most important voices for technology tools are those that are not able to use it yet. Access to the tools required to speak truth to power structures are limited through many means, however, seeking these out and making the effort to understand, learn and bring access to these people will enable them to inform you, the tool builders how to make the best most responsible tool for your and their combine purposes.

Seeking the Voices You Don't Hear Easily

Not every human right needs manifests in the same way across communities and borders. Some may need specific ways in which the technology can operate, certain countries have banned ways of communicating due to suppression/illegalisation of certain identities (LGBTQIA+ folks, Religion etc.). These people are often those that have the most critical need where their lives are at risk by using technology.

Willingness to Build Versions or Alternatives That Facilitate the Needs of the 'Fringes' or the Unintentional Uses of a Tool

A large part of the world is coming online for the first moments. Large parts of the world are staying online more frequently than ever before, engaging in new ways of communication and connecting with the world and the people around it. Building in skills, knowledge, procedures, understanding and empathy within the system that people are using is key to building a healthier, more empowered internet and its users..

Digital Skills and Literacy Are Part of You and You Embody This in Every Tool Build

Understand that harm comes in many ways and any technology can facilitate harm at its most basic and promote and insight harm at its most complex. Harm is not just the threat of physical violence and death. Harm comes in how connected we feel, how lonely we are, the way we view ourselves and the world around us and how we come into a healthy relationship with those people and the world arounds us. Technology and the internet are the method, the structure to which that relationship is built and as such has the potential to do great harm but also build safety and peace. Question every single innovation you partake in and how harm could be done with it. Build to remove harm and actively work towards peace.

Build to Avoid Harm

Author



Eriol Fox, is a Design Lead who has worked in-house roles for 9+ years. Now working at Ushahidi, a humanitarian, non-profit technology leader, developing open-source, digital tools to help people with better democratic process, human rights issues, natural and human-made disasters. Eriol is a non-binary, queer person who uses they/them pronouns and an LGBTQIA+ advocate.

Balancing Urban Innovation with a Responsible Approach to the Internet of Things: The Case of Limerick

Helena Fitzgerald, Gerard Walsh,
Gabriela Avram, Stephen Kinsella,
Javier BuronGarcia,

Introduction: Finding the Right Balance Between Facilitating Engagement and Instituting Surveillance

Smart cities appear to be synonymous with pervasive IoT. Footfall, energy consumption, passengers availing of public transport, everything needs to be monitored, predicted and adjusted to fit pre-determined models. But cities have their own individualities, and beside their infrastructures, they are made of people. In this article, we are discussing the case of a city that is involved in a large-scale project.

Limerick in Ireland has a population of about 90,000 people. It is an ancient trading city on the banks of the River Shannon. It contains medieval and Georgian structures along with more modern buildings. A grid-based layout laid down in the 1760s dominates the centre of the modern city. Infrastructural investment in Limerick has lagged other Irish towns and cities for at least 50 years.

The Georgian core of the city in particular has suffered from this under-investment in its physical capital. A key aspect of rejuvenating many Georgian buildings and their communities is understanding how to map the energy consumption and production needs of a modern building into the structural needs of a 200-year-old building. One solution is the creation of positive energy districts, where buildings generate more energy (via photovoltaic cells and other methods) than they consume, with any surplus either stored or traded on an energy market. The concentrated and concatenated layout of a typical Georgian block facilitates this engagement, and allows for the possibility of trading surplus energy between them, thus altering the investment and reinvestment equations for property owners of all kinds.

The +CityxChange project is a Horizon 2020-funded project dedicated to the creation of positive energy districts in seven cities in seven countries. Limerick and Trondheim in Norway are 'lighthouse' cities, where pilot projects can be tested and refined for use in five other 'follower' cities.

A core component of the project is sensor-enabled behavioural change, smart energy metering, and data sharing between property owners and Limerick City and County Council. This creates the familiar problem, well studied in the literature, of the governance of interconnected systems for monitoring, control and automation.

Smart city proponents point to the potential for IoT-enabled policies to enhance citizen involvement, protect the environment, facilitate social development and sustainable development, foster innovation, and increase social capital. Opponents of smart city developments cite privacy and security issues, diminishing freedom of speech and threats to democracy. What is the evidence base supporting either side's case?

Evidence of the Costs and Benefits of Smart Cities/Iot Is Still Limited

[...] most studies of Smart City/IoT phenomena were qualitative and hypothetical.

Elmaghraby et al (2014) summarise the main concerns for public policy from the rollout of potentially privacy-eroding technologies. Ziege-ldorf et al (2014) and Habibzadeh et al (2019) outline the privacy concerns surveillance capitalism backed by the State might well engender. Lim et al (2019) conducted a systematic review of actual smart city deployments of these technologies. They found most studies of Smart City/IoT phenomena were qualitative and hypothetical. Very few studies have actually evaluated the costs and benefits of real smart city IoT rollouts. When it comes to Smart City/IoT deployment, we are still very much in the dark. This is of course due to the time lags involved in rolling out IoT type initiatives, and the novel nature of many of the challenges.

Table 1 below, adapted from table 3, page 7 of Lim et al (2019), shows the results of their literature review for twelve positive (P) arguments for smart cities and four negative (N) arguments. Across the 55 studies they sampled in depth, slightly over 20% of the effects, either positive or negative, were actually observed. Of these observed effects, 60% were positive, 40% were negative. The effect size was not documented in either case, nor were estimates of uncertainty made.

how to find the right balance between facilitating engagement, enhancing the environment for Limerick's citizens, and instituting surveillance.

The +CityxChange project team is aware of all previously studied positive and negative effects of Smart City-IoT rollouts, and has policies in place to mitigate negative effects such as privacy and security issues. The key question we ask ourselves is: how to find the right balance between facilitating engagement, enhancing the environment for Limerick's citizens, and instituting surveillance.

An example may be helpful. In order to trade energy generated, and earn a return, property owners, who are recruited in our pilot phase as 'smart energy champions', will need to share data about their energy usage with one another, via a centralised exchange platform. To what extent is this data harvesting by a public body—in this case, Limerick City and County Council, and to what extent could this follow the model of midata, that is, data used jointly by a cooperative? The implementation and usage of the data exchange that facilitates the energy trading will, in fact, give us the answer.

Positive/ Negative	Results	Hypo- thetical	Observed
P	Facilitating economic development	18	7
P	Increasing efficiency of public services	17	6
P	Enhancing citizen involvement	12	0
P	Increasing quality of life	10	1
P	Protecting environment	9	0
P	Facilitating social development	9	0
P	Facilitating good governance	8	1
P	Empowering citizens	6	2
P	Facilitating sustainable development	7	0
P	Fostering innovation	5	0
P	Enhancing cooperation	4	1
P	Increasing social capital	4	0
N	Aggravating/hiding existing urban problems	11	7
N	Polarization & inequality	12	5
N	Privacy & security issues	9	0
N	Diminishing freedom of speech democracy	4	0
	Total	145	30
	Positive as % of total	75.2	60
	Negative as % of total	24.8	40

Tab. 1: Lim et al (2019), twelve positive (P) and four negative (N) arguments for smart cities.

“Configuring Participation” and Power Relationships in Citizen Engagement Activities

We are trying to surface novel answers to questions like: Whose initiative is it? Who owns the data and how are they going to use it?

A second example is that of citizen participation in a Citizen Observatory. We are keen to engage with citizens in an observatory of the city, rather than the city observing them, and build an innovation playground where new ideas can be tested within a regulatory sandbox. In all cases, the need to inform citizens and seek their consent at every step of the process is paramount. The key is configuring participation in a way that is more inclusive, and in inverting the power relationship that could exist in this engagement, were there to be a different set of institutional actors involved. We are trying to surface novel answers to questions like: Whose initiative is it? Who owns the data and how are they going to use it? In this we are guided by Vines et al (2013), who argue that often, the term ‘participation’ is used to describe the involvement of users and stakeholders in design processes. The premise is that control over the outcomes would be equally distributed. However, by selecting the participants, by planning and facilitating the sessions, the organisers are definitely in a stronger position and inclined to impose their perspective on them. How do we make sure that the citizens’ voices get heard?

[...] previously obscure 'smart-city' technologies start to have a clear purpose for citizens, helping to make sense of the world and take steps to change it for the better.

A third example from the project is titled "Citizen Sensing Lab", and is conceived and led by Colaborativa.eu, a creative studio working at the intersection of design, social activism and technology and part of the +CityxChange consortium. The "Citizen Sensing Lab" involves citizen participation in setting up and maintaining low cost digital sensors measuring air, water and noise pollution in different points in the city, from personal gardens and balconies to workplaces and public spaces. This is seen as a way for citizens to monitor the environment to prevent and fight economic initiatives such as the recent plan to burn used tires as combustible in a cement factory near the city. Data collected this way will be publicly shared. However, the quality of data might be disputed, as citizen sensing uses relatively cheap sensors that need calibration. Similar data is collected at municipal level using a much more performant installation, but this data is not shared with the public in real time. The "Citizen Sensing Lab" explores the potential of individuals and communities designing and building their own digital sensors. By doing this, previously obscure 'smart-city' technologies start to have a clear purpose for citizens, helping to make sense of the world and take steps to change it for the better.

Conclusion

Critics of Smart City project have, up to now, largely been arguing about theoretical benefits and costs of smart city technology adoption. The +CityxChange project is taking place across seven cities, focused on the creation of positive energy districts in each city. Throughout, citizen-led consultation configuring solutions, the project aims at avoiding the pitfalls identified in the literature around the institution of surveillance, and finding the socially acceptable edge of surveillance.

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Data and Lost Mindfulness

An interactive campaign to realize our risky handling of our own data. A project of students of the study course Interactive Media Design of the University of Applied Sciences Darmstadt: Elina Faber, Sarah Lerch, Jan Meininghaus and Domenika Tomasovic.

Personal data is accumulating massively. Almost all of our online and offline interactions with friends, family, business companies and administration are tracked in one way or another. Most data are provided voluntarily and to the best of our knowledge. While using social media, the information provided enables us to connect with others and socialize. For this, we happily share our location, tag friends and keep all followers up to date with Instagram Stories.

The relevance of personal data is increasing, as can be seen from the numbers of data created in the field of social media: Every minute 49 thousand videos are uploaded to Instagram, 473 thousand tweets are shared and about two million snaps are sent in Snapchat (Domo, 2018). Of the seven and a half billion people worldwide, three and a half billion are active social media users (Hootsuite, 2019). Not only contributions generate huge amounts of data, but also all clicks and interactions of users are tracked and leave data behind (Sears, 2018).

This data is worth gold to companies like Facebook. It can be used, among other things, to place personalized advertisements and have companies pay for them. Since 2016, Facebook has been training artificial intelligence in order to be able to predict the behaviour of users more accurately and thus offer its advertisers even more accurate profiles (Krempel, 2018). But other companies use personal data as part of their business model as well.

*When such huge amounts of
Data are handled, mistakes are
made and the data of millions
of people are endangered..*

When such huge amounts of data are handled, mistakes are made and the data of millions of people are endangered. This was the case with the data scandal of Facebook and Cambridge Analytica in 2018, which allegedly affected more than 87 million users worldwide. Cambridge Analytica received data from Facebook. These data records are said to have been evaluated for the election campaign of today's US President, Donald Trump. The evaluation and use of the data took place without the consent of Facebook. As a result, Facebook announced a revision of its privacy policy (Granville, 2018). Whether the data will now be more secure is questionable. Despite the data scandal, the number of daily and monthly active Facebook users worldwide continues to rise (Facebook, 2019). Apparently, users are not aware of the potential for abuse of their data or do not care. Either way, the advantages of using social media seem to outweigh the disadvantages. Out of fear of missing out (FOMO) or out of pressure to do what everyone else is doing, few people turn their backs on social networks.

The Awareness Campaign

The interactive installation “You” deals with the collection of user data. You is a student project of the Interactive Media Design course at Darmstadt University of Applied Sciences, Germany. Designed and prototypically implemented by four students in their sixth semester, the project deals with the topic of data abuse potential in times of social media.

In an interactive installation as part of an exhibition in museums, for example, users are cleverly elicited their first personal data under a pretext of social engineering, which is a form of manipulation of a victim to get hold of data by asking the right questions. Unaware of the actual use of their data, visitors continue to pursue their interests. They are tracked in the rooms via cameras and face recognition. In the background, data of the victims’ social networks such as Instagram, Pinterest, LinkedIn and Twitter are automatically pulled within a few minutes by an algorithm and compiled into a comprehensive profile. This profile is stored on a local server.

Data of the victim’s social networks such as Instagram, Pinterest, LinkedIn and Twitter are automatically pulled [...] by an algorithm and compiled into a comprehensive profile.

By entering defined zones within the location, the victim is automatically sent private messages via Instagram containing information found in its open to public profile. These messages are deliberately provocative and creepy in design, as the person is supposed to feel stalked and followed.



On screens distributed throughout the environment, the person is also publicly addressed by name and/or with a censored personal image from their own accounts. On the one hand, this is intended to further provoke and on the other hand, it ensures that the person does not miss or ignore the messages. In the course of the experience, some of these processes repeat themselves, but with different content.

Being confused about the messages and the images shown on the displays is one the goals of You.

At the end, the victim is personally informed about the installation and his or her own profile with all collected data is presented. Here, for

example, all of LinkedIn's interests and current profession, the public Pinterest Boards and the entire Instagram images are listed. By summarizing all social media profiles, the entire data mass of a single person is visualized.

Finally, the victim is given the opportunity to delete all data collected by the project team from the local servers. This is an opportunity one would never get in real life. To give this last act of this interactive experience an additional symbolic meaning, a large red buzzer is used to delete all data.

The Mission

You should at all times only have an informative effect and be used for nothing else. The installation should bring the feeling of data abuse closer to the user and make it tangible. What if somebody really is after you? Using only one data source, many more data can be read out under certain circumstances. With only the username of a platform, YOU can find and use many more profiles. You not only shows the victim a number of potentially misusable data, but also creates a visualization of the amount of data found. The experience is intended to inspire the user to think about his data behaviour without an instructive explanation. The potential for abuse should become clear to the user on the basis of his own data and the experience. Whether he changes his behaviour or attitude afterwards is up to him.

The experience is intended to inspire the user to think about his data behavior [...]

Although people were aware they shared many aspects of their lives in public, seeing a collection of all data was pretty frightening.

The reactions to the installation were mixed. Overall, there was a lot of positive feedback on the project and the importance of the topic. Some users were worried about the amount of publicly accessible data their profiles might show. Although people were aware they shared many aspects of their lives in public, seeing a collection of all data was still frightening. With this project however, there is also a danger of feelings and emotions being projected onto the team by users. The You team is aware of this and tries to draw the attention of the users back to their own, publicly very easily accessible data. The goal is to create awareness and to get the user to act. The released energy, or in some cases sheer anger, should be used constructively and lead to the safe handling of one's own data. A user of the installation, for example, has felt a real breach of trust. She accused the group member, who elicited her name, place of residence and Instagram username with the help of social engineering, that she had trusted the team member and thought she would sincerely like her. As a result, two days after the experience, the person changed their username of all social media accounts. Why don't we feel this breach of trust in the systems we use on a daily basis when our data is misused?

This three-month project by four students shows how easy it is to get automated access to huge amounts of personal data. What can a company achieve with more time, resources and a clear goal?

3 Tips to Escape Surveillance Capitalism

Facebook has nested itself in all the lives of over 2 Billion people and is currently unstoppable. Make sure you understand what services Facebook offers and which of them you use and then leave them. If you are afraid that your friends won't follow you to a communications platform like Signal, then you should deeply question your friendship to those people.

Leave Facebook Behind You

Letting former or current Google executives on a companies' board is a warning sign that e.g. the servers are run by Google and therefore has control over this data.

Question the Actions a Company Took in the Past

Moving to Applications which are run on the Machine locally or are self-hosted, can ensure you where the data are. But even with local Applications be sure that you read through the privacy policies to see if they are sending data to third parties.

Switch to Local, Self-Hosted and Open Source Software

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Zuversicht – Challenging the Narrative

An interactive intervention to formulate and discuss a desirable future. A project of students of the study course Interactive Media Design of the University of Applied Sciences Darmstadt: Philipp Kaltofen, Julia Metzmaier und Anne Schneider.

The Future is Dystopian



When thinking about our future, we are often confronted with pessimistic images and dystopian visions: The advancing destruction of nature, an emerging movement of the far-right almost everywhere in the world, technology corporations that value their capitalist interests over basic human rights. Every day, news and popular culture drives us down a depressing wave of concerning developments. Even though, or maybe because, most people in the western hemisphere live better than ever, in one of the longest (relatively) peaceful period of recent history, it's hard to focus on positive outlooks on the future (Tsoukalis, 2005, Welzer, 2018).

While an active confrontation of the pressing issues is certainly needed, it is easily forgotten that we are mostly fighting symptoms. Would it be better to look at the positive aspects or the negative ones?

Although it is tempting to sink into possible dystopias, doing so creates mostly rigidity in the face of the seemingly unstoppable demise of our way of life. We find out how we don't want to live. But how do we want to live? Perhaps it is time to think about desirable futures. Positive images of the future create a culture of solutions. We find out which aspects of life are and will be important to us. Each and every individual for themselves. The power to change something socially has seldom arisen out of despair or out of indifference. Much more often it was the motivation to improve something: Dreaming of a world worth living in and working towards it.

The Value of Utopia

But what good does it do me to have a utopia in my head? Aren't its large corporations that decide about our future? Isn't my life much more shaped by technical innovations? Surely both have their influence on us. Yet why should we as a society allow any of those to dictate how we should live? Philosopher Richard David Precht argues that it is culture that determines how our future develops by using it as orientation about what makes our lives worth living (Precht, 2018).

And it is precisely this orientation that we lack today. Our values, ways of working and living are framed by the past.

And it is precisely this orientation that we lack today. Our values, ways of working and living are framed by the past. However, can we afford to live conservatively at a time when the foundations of life are changing faster than ever before? At a time when we no longer have the luxury of indulging in slow, natural transformations (IPCC, 2018)? At a time when it must be the task of every member of our world community to deal with a positive future so that it can be actively shaped?

We need to look at our possible futures. To question the circumstances. To be courageous. To be allowed to dream.

It is not only a matter of clarifying questions, but also of raising them first. How must our actions be structured? When a new wave of unemployment approaches us in the next few years (Frey & Osborne, 2013)? When the growth paradigms of the 21st century reach their limits (Rifkin, 2014)? When innovation becomes an opponent of human dignity?

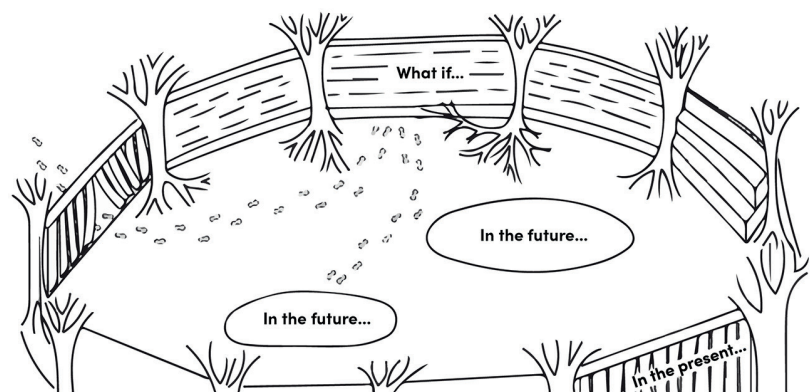
We need to look at our possible futures. To question the circumstances. To be courageous. To be allowed to dream.

The Project

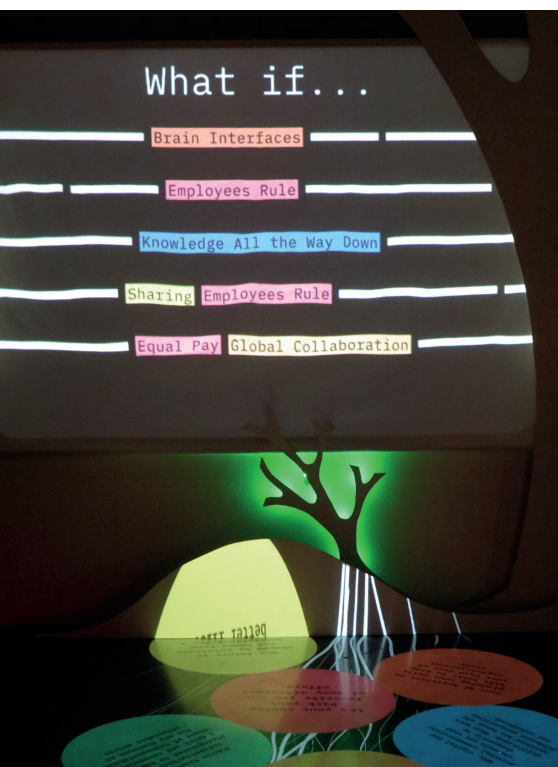
'Zuversicht' is a project developed by four students over a three-month period as part of the Interactive Media Design course at Hochschule Darmstadt. The word 'Zuversicht' is German, describing an optimistic outlook towards the future.

With Zuversicht, we try to challenge the present way of thinking about our collective future. The main goal was to inspire the users to make up their own ideas of a desirable way of living. After extended research and future-casting, we decided on an interactive installation.

Located at public places and festivals to reach a diverse crowd, the installation makes use of different large projections. After raising interest in positive future opportunities, different views get combined in a collective area, opening up a discourse between attendees.



Seen from the outside, the installation resembles a group of trees surrounding a clearing. Between the trees you can see brickwork in some places, through which the tree trunks seem to have made their way. In other places it looks as if branches are hanging down between the trunks like a weeping willow. Approaching the installation, projections on these sections of the installation can be seen. Images and negative headlines captivate the attention of the viewer. They represent the present, in which it is often difficult to detach oneself for a moment from the here and now, to gain inner distance and to deal with the future in thought. To do this, visitors to the installation can now enter the future through the hanging branches. If they let their gaze wander over the inside of the installation, they will notice some elevations on the ground. Some of them are filled with light and colours, others are yet to be filled. The clearing is surrounded by abstract trees. The roots of these trees run everywhere through the bottom of the surface and shine softly. At the edge of the installation, the roots run to the projection areas between the trees.

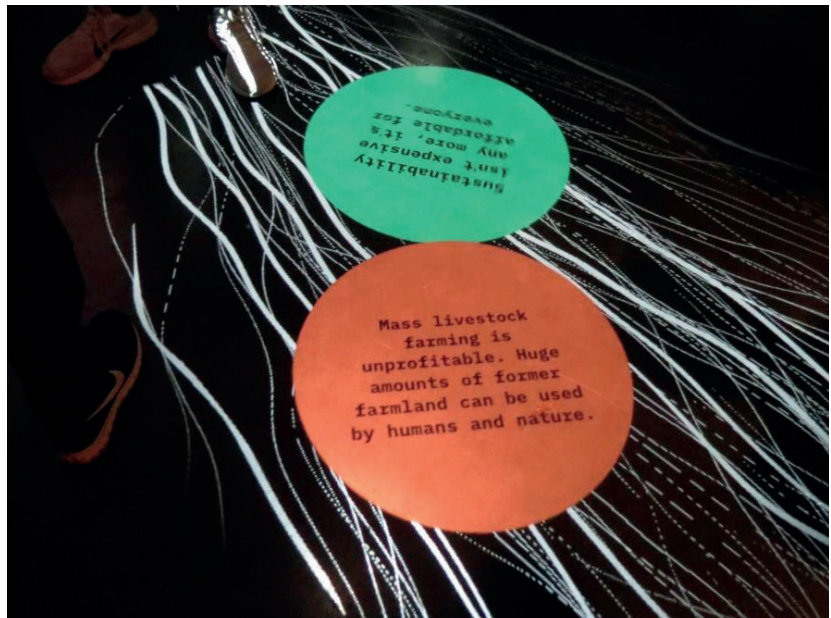
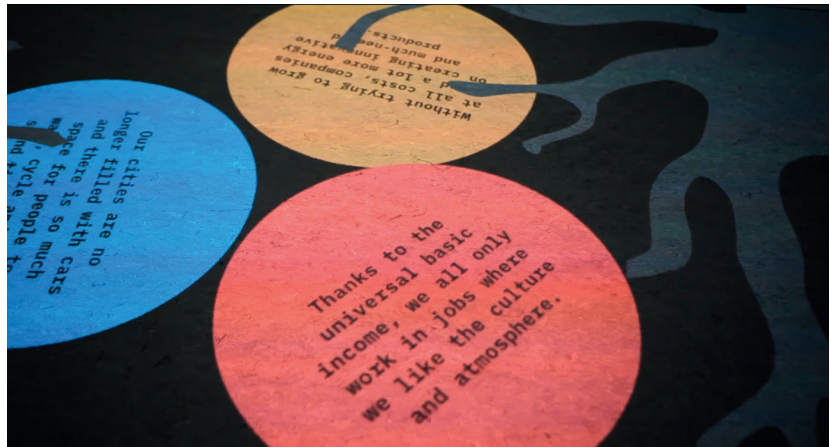


The installation consists of three interactive stages. In the first part, users can discover short headlines that are projected on surrounding walls. By moving around the installation area, lines get highlighted and show their headline. These could be headlines such as “General Income”, or “Autonomous Mobility”. Once the visitor’s attention is drawn, the text representing a possible future can be extended by gestures. In the extended version, a story is shown.

While image-based stories would be too constricting in the imagination of the users, we settled on textual representations. These short but precise future fragments could be communicating a scenario of how robots help us in everyday life, or how an established sharing economy took over materialistic tendencies.

Every fragment falls into different categories that shape our lives, such as “Technology”, “Work”, “Education” or “Environment”. Each story shows a possible positive development. If a story has been brought to life through interaction, the root at the foot of the corresponding wall begins to glow in the same colour as the story itself. The user can now select possibilities by moving them with gestures into the tree roots. From all future decisions made by the visitors present, possible futures now emerge in the central space. Each future is depicted on one of several elevation on the floor of the installation. As long as only a few stories have been selected, there may be only one future for the time being. But as soon as more decisions or contradictory decisions are made, different possible futures emerge dynamically. Representing roots, a vast net of LEDs on the ground is used to display the individual possibilities flowing from the walls into the futures. And when a future divide into several, the individual decisions that make up the futures flow through the roots from one future to another. All these processes are visible and audible for those present.

In its final stage, a future fragment is not alone. It is part of a bigger story – thus engaging the different users to talk about their, now collective, vision. Combining them also communicates that there is no single unique future: It always comes down to the actions of today that define tomorrow.



The users make their decisions and the futures emerge dynamically from this.

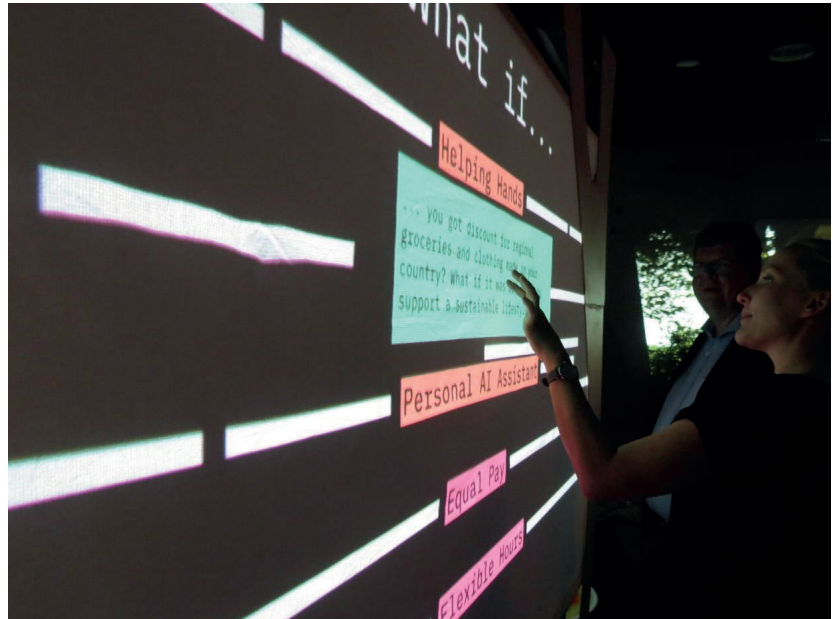
The possible futures are always in flux. Every single decision can change which futures are open to humanity. Some futures are similar, others have aspects that are mutually exclusive. Each individual bears the responsibility for his own actions and can thus influence the development of the futures of all. We can help to shape, but have no control over, which future will manifest itself. Exactly this reality is reflected in the installation. The users make their decisions and the futures emerge dynamically from this. This process is not actively controlled, but follows certain rules. Visitors can only watch with excitement what emerges from the design possibilities they have used themselves.

Through the futures, they meet the people who, together with them, have contributed to what they see. As they discover the futures that have emerged and witness how the futures continue to evolve, they can discuss their questions and thoughts with those around them.

It is not enough to realize what is wrong about our present life.

Change won't come by itself, just as ubiquitous lamenting of the present won't help with the big challenges of our century.

By experiencing the installation, we hope to invite visitors to consider a different mindset towards the future. It is not enough to realize what is wrong about our present life. Change won't come by itself, just as ubiquitous lamenting of the present won't help with the big challenges of our century. We have to actively think about better, more sustainable and dignifying ways to live. It is time to change the narrative of our time to a more solution oriented positive outlook. If the popular dystopias of the last centuries didn't prevent the state of today, maybe we are ready for some Zuversicht.



3 Tips to Escape Surveillance Capitalism

What are your motivations for putting out your work? Are you in it for the money, or for the people? Is it fame or recognition by your peers that you seek? Our personal values aren't always aligned with our true motivations in life. You have to be sure about what you want to put out to the world. The clearer that images gets, the easier it becomes to see how to do things differently. If you believe in the right for privacy, why would you consider working for data hoarding tech companies?

As designers, we are in a position where it's not just an opportunity to take the first step into the right direction, but our very responsibility.

Challenge the Silicon Valley style of start-ups. Innovate in the business aspects just like you are innovating in design and technology. Consider new ways of working, sharing, living and co-existing.

Challenge the Status Quo

You are (or aspire to be) an expert in your line of work — have you considered starting to talk and teach about surveillance capitalism in regards of your field? There are many great opportunities if you just look for them. From local meetups, to universities up to bigger conferences. By teaching the new generation of designers, technologists and founders, society can become future proof.

Teach & Talk

When trying to change a system that is as deeply rooted in every single aspect of modern life as capitalism is, it won't help to just propose a radical new one that's supposed to fix everything that is wrong. However, if you find a way of doing things different, while still working in the predominant system, there's a chance of success.

Talking about the negative aspects of surveillance capitalism is certainly the first step. But if you want to really have an impact, you must show that there are other ways of doing things (and getting results by doing so). Be the guiding light for others to follow.

Show That You Can Make a Difference

Authors



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Design Me a Pause Button, Graceful and Dignified

I am trying to finish writing this thought but my phone keeps buzzing, helpfully informing me that another email arrived, a new tweet was posted, there was a response to my Facebook post... This never-ending stream of helpfulness from all things digital, of course, can be turned off, deliberately silenced with yet another set of applications which themselves will remind me to turn them on periodically. Ours is the world of constant reminding, of making sure we do not miss that important item, message, happening.

Human memory is fallible and needs to be supported, but what about that little red number attached to the icon of my email program where unread emails number in the thousands at this point? I am too exhausted to be feeling guilty about that anymore. Yet so much of my technology is there re-minding me that I haven't spent enough time with it lately – my Fitbit is languishing and Facebook would really like me to “re-engage” (Matsakis L., 2018).

Most designers know the maxim that attention is the scarce human resource and yet here we are – having created a monstrous system that continuously competes for our attention in the most predatory and aggressive way possible.

In 1971, Herbert Simon famously said that “... in an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it.” Most designers know the maxim that attention is the scarce human resource and yet here we are – having created a monstrous system that continuously competes for our attention in the most predatory and aggressive way possible. Sight, sound, haptics (how many different vibrations can you use to remind?), temperature changes – we haven't yet gotten to smell and taste, but there have been some attempts. Where did this all start and how did we end up here?

Shoshanna Zuboff argues that the drive to entice ever greater levels of engagement with technology comes from forms of surveillance capitalism moving to commodify the digitalized private human experience. This explains why Facebook, Slack and their ilk attempt to colonize ever more aspects of life, focused as they are on constantly increasing engagement. Zuboff's point is that there is nothing ordained by digital technology, nothing specific to the digital – “what people invented can be uninvented” she said in one of her public speeches – if we only strip out the economic logic of trading on predictions of human behaviour then we can have the positives of technology without the negatives. Certainly, the fortunes of many companies trading on human attention

rise and fall with performance on various engagement metrics, but I disagree with Zuboff that this is mostly a regulation problem. While regulation as a route to a better digital future is important, I believe there is plenty to consider from a design point of view as well.

The attention economy is central not only to the business enterprise, but to the logic of interaction design in general.

The attention economy is central not only to the business enterprise, but to the logic of interaction design in general. In some ways, the purpose of interaction design is to create engagement – to excite, to entice and to entrance – to create an aesthetic and engaging experience. While engaging technology is important, what we tend to forget is how to design for disengagement as well. All technology has to fit into the rhythms of life and I don't want my email to colonize all of my time (although my email clearly has different ideas). In our research, my student Nanna Gorm and I show pretty convincingly that people use some technologies episodically not continuously (as their designers intend) (Gorm & Shklovski, 2019). Although Nanna had focused on health tracking, I think this is true of most any technology. Whether counting steps or checking Facebook, life intervenes and dictates its own rhythms of use.

I found that research by O'Brien and Toms from decades ago suggested that engagement is cyclical – people engage, disengage, re-engage and that supporting the full cycle is key (O'Brien, H. L., & Toms, E. G., 2008). Disengagement is just part of how we engage with technology.

Somehow the disengage part of the cycle has slipped our minds and we do not design for it. After all, that seems counter-intuitive – don't you want to keep as many people for as long as possible using your service? This creates a kind of pathological cycle: designers create ever more compelling, effortlessly usable and enticing technologies. People use these and find it difficult to disconnect, leading to claims of addiction and problematic use of different kinds. A cottage industry of apps and software has emerged to help all of us with an apparent problem of self-control, to empower us (of course) so we can finally limit or temporarily stop using these technologies. Yet coming back to Facebook or FitBit after a period of abstaining can overwhelm with missed and new material in the case of Facebook and dishearten with glaringly "empty" days that ruin all the averages and achievements in the case of Fitbit. These technologies are designed to prevent disengagement, leveraging guilt and fear of missing out to make us stick with them.

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The trouble with disengaging from technology is not about self-control. Self-control isn't just something we have or do not have – it is a resource and it can be easily depleted.

Self-control requires energy to achieve. Not only is our capacity for self-control shaped by our social and economic backgrounds (McCrory Calarco, 2018), but it requires expending cognitive effort (Friedman, 2011). This means that the more self-control we have to exercise the more mentally tired we get, making further exercise of self-control much harder. No wonder I am constantly feeling exhausted! If none

of our high-engagement technologies are designed to allow us to grace-fully disengage and then to reengage without the overwhelming feeling that we have missed out on all things important, then what we are doing is designing in the very pathologies that create opportunities for what Zuboff terms surveillance capitalism.

*Our current choices
are typically binary
– use or not use*

I want a pause button, but not the kind I can have right now when I can turn something off and get overwhelmed upon return. Our current choices are typically binary – use or not use. There are of course options where use is concerned. I can filter my content, provide some boundaries, even modulate just how engaged I might be. There are so many options, settings and control panels that I don't have time to spend thinking about how to adjust and manage each. Very few of these though facilitate disconnection with grace and allow me to retain dignity in coming back to the technology. Perhaps Facebook could provide a short recap of things that I have previously marked important or give me a digest for when I come back to it? Only when I come back instead of emailing me "your friend has made an update come see what it is!" with ever increasing frequency while I am away. The Pause button should respect my choice of stepping away and accommodate calm reengagement without pressuring me for return. The health tracking algorithm needs to be able to deal with the missing data without guilt inducing signalling of empty days and ruined averages. The statement "I forgot my FitBit so my steps do not count" should not seem funny but a little too close to true. It should be incomprehensible. Such a pause button would be a mechanism to limit and challenge the dominance of platforms that want to read our lives as a digital text, made transparent to the alien vision of machines.

Perhaps this is not a recipe for drastic change in surveillance capitalism, but a commitment to design for episodic use and disengagement is to design for treating users decently and with dignity. This is also a way to design for holes in the data and for a different kind of relationship with technology. It's a small step, but we all need to start somewhere. So, I want a pause button – a well-designed method of halting my engagement with technology with no drama attached.

3 Tips to Escape Surveillance Capitalism

Design for the full cycle of use practices, including disengagement as a feature and not a bug.

Disengagement as a Feature

Design to support a variety of episodic use approaches as a norm and for continuous use as an unusual occurrence. Encourage at least occasional disconnection.

Encourage Disconnection

Organizational and social environments of technology design, the social milieu of tech innovation will resist challenging the holy grail of engagement. This is a struggle about the ethics of design in as much as it is about better products and services and it is time to act. (Ustek-Spilda, Powell & Nemorin, 2019).

It is Time to Act

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Sex and Magic in Service of Surveillance Capitalism

"Oh no, my dear...I'm a very good man. I'm just a very bad wizard."

– *The Wizard of Oz*

We are eager to trust in the appearance of things. Uniforms, styles of clothing, badges, brands, logos, signs, symbols and sounds invite the illusion of trust. Machines simulate trust by mimicking human conversation. One of the earliest chatbots, ELIZA, showed how easily people attributed human-like feelings to a computer. (Weizenbaum, 1996) ELIZA's creator Weizenbaum was surprised that many people attributed emotions to the computer program and ended up telling it personal secrets (Hofstadter, 1996).

Just as the stage magician employs methods of diversion to conceal labour, so most technology today conceals labour and manufacturing processes behind a 'magical' front.

Human beings are easily beguiled. But the magical and illusory effects of technology can be amplified by the ways in which technology is ideated, designed, and marketed. There is a consistent rhetoric to create technology that appears to work like 'magic', which in practice usually implies that the manufacturing, labour, working and upkeep of the technology is hidden from the user in a way that the device or software appears to pull its services out of thin air. Just as the stage magician employs methods of diversion to conceal labour, so most technology today conceals labour and manufacturing processes behind a 'magical' front. With digital technology, it is often not easy to see beyond the appearances presented by our machines to look into the inner workings. Unlike the analogue automatons of the past, we cannot physically open up our digital devices and this fact makes it easy for us to be carried away by incorrect ideas about how these technologies work.

The boundaries between machine intelligence and human labour seem to be getting ever more blurry.

The Mechanical Turk was an automaton chess player in the late 18th century that astounded Europeans until it was revealed to be a hoax controlled by a human being. Amazon's Mechanical Turk is an online platform where people perform human intelligence tasks under the guise of Artificial Intelligence. These tasks include mundane activities such as transcriptions, image tagging, and line-editing, usually for a meagre amount, sometimes less than 2\$ an hour. Many workers earn less than the minimum wage (Semuels, 2018). In 2017, users of the smart receipt scanning system Expensify were let down after it was revealed that Expensify's 'smart' scanning technology was secretly aided by humans (Griswold, 2019). Facebook hires teams of people to moderate content on its platform (Gershgorn & Murphy, 2019) and Uber relies on an army of drivers around the world to work in conjunction with its intelligent algorithms. Google harnesses the intelligence of people on the internet to fuel Google maps and the digitization of books (Amadeo, 2019). The boundaries between machine intelligence

and human labour seem to be getting ever more blurry.

These examples seem to indicate that many of the software and devices we use are barely more than crude Wizard-of-Oz (Baum, 2008) experiments, marketed as magical contraptions. Machine Learning and Artificial Intelligence today are words thrown around to imply complete algorithmic autonomy, decision making and intelligence. But Machine Learning algorithms require large datasets to learn their rule making abilities - datasets that are curated, tagged and sorted by human beings. Artificial Intelligence today rests on the back of uncredited human labour, intentionally disguised to promote the rhetoric surrounding the magic and so-called innovation of AI technology.

In Christopher Nolan's film adaptation of the book 'The Prestige', a magic trick is performed that involves a bird in a cloth-covered cage (Nolan, 2007). When the magician pushes on the covered cage, it collapses on a table and he produces the bird in his other hand. Backstage, however, it is revealed that the bird actually died in the collapsed cage and the magician had shown the audience a double. The audience is in awe, but the illusion requires the death of a bird. In the Prestige, something is always left behind, covered up and discarded for the sake of the trick. In the age of Surveillance Capitalism, who are we leaving behind for the sake of our magical machines?

We may be entering a new era of Surveillance Capitalism but the vestiges of old-fashioned Capitalism – hidden labour, worker exploitation and gender roles, we find manifesting themselves in new and elaborate guises. The cogs of the Surveillance Capitalism machine are turned not by mechanical arms but by human ones. By miners in Bolivia, Factory workers in China and Mechanical Turks in India. That is the essence of magic – distraction, diversion and the displacement of labour.

The Magician's assistant is a symbol of female passivity, servility and the concealment of labour.

The Magician's assistant is a symbol of female passivity, servility and the concealment of labour. The assistant is subject to various contortions, dismemberments, sawings and decapitations while she continues to smile and wave at the audience (Coppa, 2008). Our gendered technology – from Eliza to Alexa, must bear similar forms of torment while carrying the burden of our own technological illusions. ELIZA was given a female name and meant to be a 'female' chatbot. For many years, the announcers at train stations and the automated telephone voices were deliberately gendered. The trend continues as smart assistants like Alexa, Siri and Google Home continue to be gendered and default to the female voice. Why are machines so gendered when it comes to intelligence?

Like the Stage Magicians relied on their charming assistants to distract the audience from their sleight of hand, Capitalism's closest comrade – the advertising industry has always relied on the female image to keep the Capitalist machine comfortably churning. 'Sex sells' was always the motto. Surveillance Capitalism seems to have borrowed a few tricks from its cousin – old fashioned Capitalism. A voice assis-

tant like Amazon's Alexa – marketed as a companion, a domesticated housekeeper, a confidant, a caregiver, an obedient assistant, a teacher, successfully plants a non-threatening female personality as the all-smiling, waving face of the surveillance capitalist machine, in our living rooms. The feminization and the female persona are therefore successfully leveraged to beguile, to charm, to disguise us into letting our guard down – to pacify us into the normalization of surveillance and the implications of technological intrusions in service of data capital (Woods, 2018).

The depiction of technology as sleek, shiny and 'sexy' is pervasive today across product design, advertising, film and television. Companies like Apple have successfully managed to give our latest devices a sexy front – smooth, shiny, reflective, edgy. Las Vegas, which makes money by selling the fantasy of glamour without labour, is the magic and sex capital of the world (Coppa, 2008).

A shallow, soulless town built in a desert, Las Vegas is the epitome of Capitalism's use of sex and magic to present a glamorous front, hiding a barren landscape. The 'Las Vegasization' of technology might lead us down that very path – with technology that is presented as astounding but is in reality quite underwhelming.

Many of today's IoT products are deceptive by design. All voice assistants mimic human conversation and are, therefore, from the outset, playing Turing's Imitation Game. In physical form, sleek finished products offer no clue as to the background labour, history and manufacturing processes that went into making the product. Nothing in the form of the product alerts us to the functions and capabilities of the devices such as the types and number of sensors and when these are turned on or off. Most IoT products are black boxes – impossible to open up, repair or modify in any way. Digital code is concealed from users as is digital labour. And to add to the deception, digital code can be remotely modified by the manufacturer of a device at any time, without us ever knowing.

The Internet of Things, like every other technology, is part of a larger assemblage of social, cultural, political, economic and technological interests. The IoT assemblage normalizes questionable technological practices like surveillance and data mining, which comprise the real value of the IoT. The assemblage is formed on the back of projected values, reflecting the interests of public and private organizations.

Organizations spend large amounts of time and money to associate a technology with popular ideas, trends and values through advertisement, location and association. The physical devices in the IoT assemblage themselves serve as obscurers, offering no clue as to the functions, capabilities and histories of the device. The ability to entrance the senses has always been used to inconspicuously establish trust. In the age of Surveillance Capitalism, technology hides behind layers of deception, rhetoric, illusion and enticement.

Law and regulation for a Responsible IoT must serve to un conceal technology towards broader understanding of the three layers of exploitation in Surveillance Capitalism

There is a need to question the aesthetics and rhetoric surrounding technology today. A responsible Internet of Things is one in which our technology is presented, marketed and spoken about transparently. Establishing a clearer rhetoric around the way technology works includes the unconcealment of human labour and the demystification of systems like Artificial Intelligence and Machine Learning. A move away from 'sexy' aesthetics – female voices, shiny surfaces, sleek finishes to aesthetics that promote better understanding and clearer conceptions of our technologies is necessary. The nature of digital technology presents new challenges for technological explainability. Law and regulation for a Responsible IoT must serve to unconceal technology towards broader understanding of the three layers of exploitation in Surveillance Capitalism – the exploitation of the human labourer, the exploitation of the feminine aesthetic and the exploitation of consumer understanding.

In promise of a non-binary gendered world, a group of scientists, linguists and sound engineers have collaborated to create a genderless voice for AI. Produced by Virtue Nordic, in collaboration with Copenhagen Pride, the voice, named Q falls in the 'genderless sweet-spot' of 145 Hz to 175 Hz. An online interactive interface allows people to play with the voice, exploring gendered AI from the edges of 'masculinity' and 'femininity' to a genderless grey area (MacLellan, 2019).

Jeremy David Johnson's 'Becoming the Bot' offers a curious counterpoint to the anthropomorphisation of chatbots, the deceptive agenda of mimicking human speech and the blurring boundaries between human tasks and automated labour. In a clever 'Reverse Turing Test', Johnson attempts to masquerade as a Twitter bot, adjusting his behaviour through style of tweets, comments and likes on the popular social networking platform. He then runs his activity through 'bot detection websites' such as botornot and botcheck which assuredly classify him as a bot, making him a successful patron of the Reverse Turing Test. As we enter a world where it becomes challenging to ascertain whether there is a human being behind an AI system, experiments like Johnson's open up the possibility of a future where 'wizard-of-oz' detection systems allow one to investigate how a particular technology operates. Johnson talks about 'reflexivity' which opens up the possibility of self-aware or reflexive bots and more reflexive humans behind the scenes (Johnson, 2018).

In response to the improvement in natural language generation, it is becoming increasingly hard to distinguish a bot from a human being.

In 2019, California passed a new 'bot bill', requiring bots to conspicuously identify themselves as non-human. In response to the improvement in natural language generation, it is becoming increasingly hard to distinguish a bot from a human being. But the illusion works the other way around, with humans masquerading as bots or algorithms. Do we need a 'human-bot bill?'. One that requires tech companies to reveal the humans behind their so-called 'AI' products? The California bot bill is a promising start towards establishing human-machine labour boundaries but where it falls short is by not holding social networking platforms like Twitter accountable for labelling bot accounts.

Twitter already attaches 'verified' badges to authentic and trustworthy accounts, what we need is a 'bot' badge for bot accounts. Similarly, several organizations around the world are working on 'Trustmarks' for the IoT. A simple 'Trustmark' could require companies to reveal whether there is a human behind their service (Diresta, 2019).

In 'Rebooting AI', Gary Marcus and Ernest Davis offer a good starting point for questioning AI rhetoric with Six questions to ask yourself when reading about AI. Marcus and Davis offer a promising direction towards transparency and understandability while talking about AI and accountability in the way technology is presented by tech companies and in the media (Marcus & Davis, 2019). Meanwhile, products like Fairphone have established value in making manufacturing and labour transparent and Mark Graham's Fairwork Foundation has made the rights of digital platform workers a priority by highlighting fair and unfair practices in the emerging platform economy.

These are disparate, yet promising steps in the right direction, towards recognising human-machine boundaries and enforcing small and meaningful endeavours in definition and pursuit of responsible technology.

4 Tips to Escape Surveillance Capitalism

On Our Bodies - Get to know your body. Leave your fitness tracker at home the next time you go for a run.

Trust Your Body

In Our Homes - Trade in your Smart Home Assistant for an old-fashioned radio, a pen and paper.

Be Your Smart Assistant

In our Communities - Take your social networks offline and into your neighbourhood.

Establish Real Social Networks

In our Cities - Reacquaint yourself with your city, ditch the digital maps.

Reacquaint Orientation

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The Alienating Consequences of Things That Predict

Iskander Smit

Things become networks, autonomous things with their own agency as result of the developments in artificial intelligence. The character of things is changing into things that predict, that have more knowledge than the human it interacts with. Things are building new kinds of relations with humans, predictive relations. What is the consequence of these predictive relations on the interaction with humans? Will the things that know more than we humans do, help us understand the complex world, or will the things start to prescribe behaviour to us without us even knowing? What is the role of predictive relations in the design practice of the future designer?

This notion of predictive relations is linked to earlier research in the research program PACT (Partnerships in Cities of Things) and the work in the Connected Everyday Lab by Elisa Giaccardi and others. The notion that we will have affective things that draw conclusions from the interaction things have with humans, and combine these with build-up knowledge from the network, is illustrated in the provocation by Iohanna Nicenboim and Elisa Giaccardi called Affective Things.

In a paper (Lupetti, Smit, & Cila, 2018) we described some near future scenarios in which things connect to existing data and cloud services in the smart city and act in concert with people. In a few specific scenarios we sketched how these relations may play out. From a pizza delivery pod that knows so much of the background information in combination with historical data on orders, that it can become an affective thing, starting a dialogue on the situation of the person ordering the pizza. She used to order always two pizzas but lately the orders became one pizza and combining with other behaviour the conclusion is drawn the relationship of the girl with her partner has ended. The delivery pod here takes on a new role as good friend, a shoulder to cry on. A role that can do no harm if it stays within the domain of that one interaction. The links to other behaviour in other situations indicates though that this is not the case.

The delivery pod here takes on a new role as good friend, a shoulder to cry on.

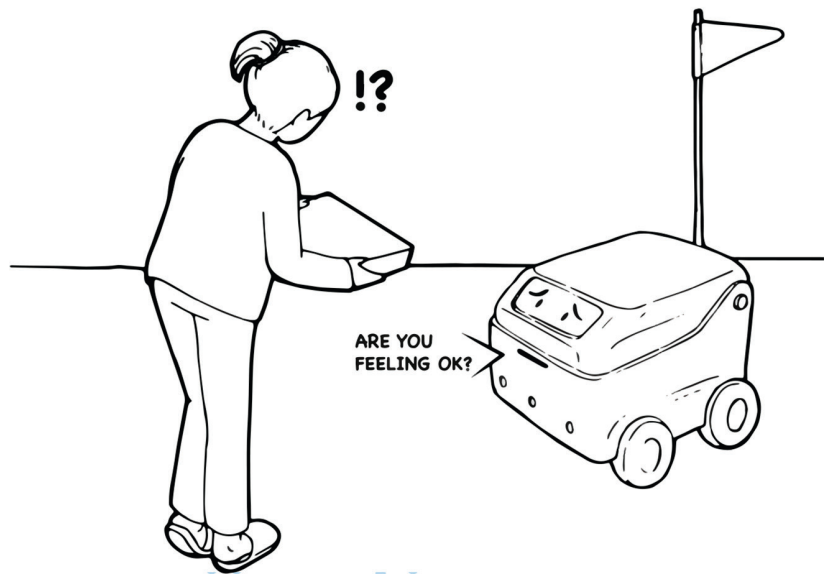


Figure 1: a new relation with autonomous things. Illustration by M.L. Lupetti from (Lupetti et al., 2018)

Another example describes a future public transport situation, based on a system of smaller transport pods that have a flexible route planning for going from A to B. This means that the pods don't follow fixed routes and the travel time is severely reduced. But there is a catch. The system is not only flexible in the journey mapping, the planning is also considered who is travelling and including the social status of the person traveling. The service is there for planning its routes via a combination of actual efficiency in the route and the priorities. Consequence is that the journey time is hard to predict for the individual traveller. Creating more transparency in the decision making is key in building citizen robotic systems that are trusted by human citizens (Lupetti, Bendor & Giaccardi, 2019).

The Fundament of This Future Society

What is driving these systems to materialise? The first driver is the digitization of our world in all aspects. We have deconstructed our cities with increments of buildings or structures into a layered model where the basic layer is the physical layer. On top of that we have a digital layer that is connected to databases and computing capabilities. Entities can be physical or digital and are using the digital layer to be assembled to a state in a service. This is the fluid assemblage (Redstrom & Wiltse, 2018). Not only can these assemblages be defined at the moment of use or interaction, also the physical layer functions differently. Instead of setting the stage it is a blank sheet with the right components. Kitchin & Dodge described this situation as a Code/space (Kitchin & Dodge, 2011), a space where the digital computing layer has become crucial in defining the functionalities. No computing layer means no functionality. Something that already can be seen in ultimo at an airport. In the deconstructed city the services offered are totally open for interpretation but at the same time the control of that layer is more and more limited to a selected number of players.

The thing itself is changing too into an intelligent artefact. It connects with an existing network, collects real-time data and acts proactively

The thing itself is changing too, into an intelligent artefact. It connects

with an existing network, collects real-time data and acts proactively. And most interesting, it has a social behaviour. These things take their own role in our society, things are citizens.

Predicting and Prescripting

This creates a situation in which the thing has more knowledge on possible future developments than the human can have based on the combination of observation and anticipation.

That things are becoming networked objects behaving as fluid assemblages is the start. These things can adapt to the data in the network and the interaction with other things and humans. This creates a situation in which the thing has more knowledge on possible future developments than the human can have based on the combination of observation and anticipation. Anticipation is here based on knowledge from experience or learned interpretations. If we let go of a ball we understand it will fall to the ground. When that same ball is an autonomous operating ball it can connect to the network and things start to predict outcomes, it means that it will feed forward on situations we did not anticipate.

The more complex the behaviour of the thing is the more anticipation on expected results is steering the interaction. The more complex the thing the more depending we will be on the predictions made.

In the future we will shift continuously between the simulated future and the now. Think on simple examples as the weather app that is predicting rain based on radar data and sensors, ruling our perception of the expectation of becoming wet when going outside more than the judgement of the real rain situation. And more specific the example of a Tesla that is predicting an accident and taking the initiative to brake before the first accident is really happening.

We are entering here an interesting domain of tension; what is ruling, the predictive system that helps us to understand the complex world, or a system that is prescribing our behaviour?

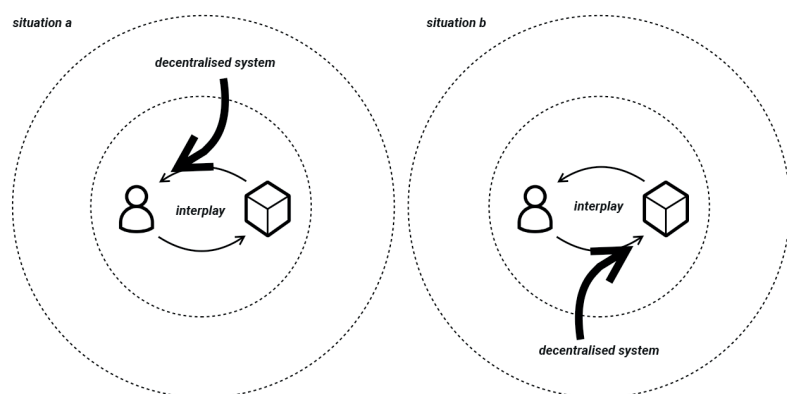


Figure 2: model of predictive relations and how the decentralized system is informing user to make decisions (a) or prescribing behaviour (b)

If the things will form a framework for our decisions, will we transfer agency to the system of things? And if we do so, will that limit our own agency? This is no question; we already put more trust in systems to keep knowledge and remove this knowledge from our memories. Google is the ultimo assistant. And this is an example of what depend-

What we think is true is depending on what tools like Google present to us.

ency entails. The filter bubble became a recognized concept. What we think is true is depending on what tools like Google present to us.

As soon as we start to experience this disconnect from real world and (pre)scripted life alienation is a possible outcome. We feel disconnected from the devices as the working is more defined in the decentralized system than in the direct working. This even can cause physical unease (Bean, 2019).

A New Design Space

The interplay of predictions and actions creates a complex interrelated design space. Predictive behaviour shapes our mental model on the acting of the thing. At the same time our actions shape the digital model of the thing. In a first model of predictive relations the interplay of the human and the autonomous operating thing is deconstructed into a combination of pattern recognition, interactions with a digital representation of the thing and knowledge from probable futures generated by similar instances in the network.

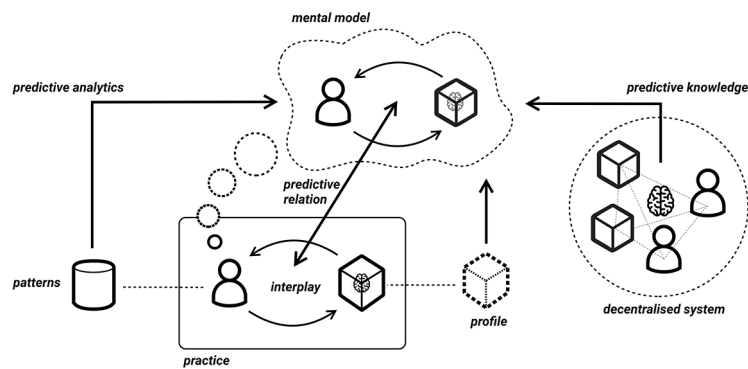


Figure 3: visualization of the hypothesis of the working of predictive relations

The choices made in the design defines the distribution of agency between system, thing and human.

For designers of physical things, the span of control is already extending from the physical instance to the digital service that is incorporated or unlocked via the physical artefact. With the notion of predictive relations there is a need for designing contextual rule-based behaviour. The choices made in the design defines the distribution of agency between system, thing and human. Systems of things form an entity on its own and the design is both influencing the system as the things, as it is influencing the interplay of the thing and the human. To deal with this complexity the default acting might be to automate the system behaviour with machine learning and AI. But what does that mean for our position in that system. Can we keep a set of responsible rules? We like to work with known knowns and known unknowns. But what is the consequence for the way we design if we need to do this for unknown knowns?

3 Tips to Escape Surveillance Capitalism

The more complex our world becomes, the more we depend on predictions to be able to anticipate our behaviour. Creating more transparency in the decision making is key in building systems that are trusted by humans.

Transparency in Decision Making

For designers of physical things, the span of control is already extending from the physical instance to the digital service that is incorporated or unlocked via the physical artefact. With the notion of predictive relations there is a need for designing contextual rule-based behaviour.

Contextual Rule Based Behaviour

The designer of things will have a new design space when things become things that predict. Understand how people build a relation with the future through the working of autonomous technology.

Understand The New Design Space

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Surveillance (Alternatives), by Design

Note: This is based on a piece that was originally published on Medium on 13 Feb 2019 (<https://medium.com/@hrwiltse/surveillance-capitalism-by-design-7f3f2f429931>).

What Is Going on with Things?

This is a question that has been animating my research for the past few years. It has led to identifying some basic shifts underway in how things are made, when, where, and by whom, and what they are made of. Due to networked connectivity, the things of everyday life have become active and responsive, adaptive and changeable, contextually configured and customized for particular users. They are not made once in a factory on the basis of a final prototype, but rather assembled on the fly from a variety of local and networked components and connections. Because of these characteristics, Johan Redström and I have conceptualized these things as *fluid assemblages* (most extensively in our book *Changing Things*) (Redström & Wiltse, 2018) in order to understand them in a way that can help us come to grips with how things are changing, and what this means for design and use. This is a shift that we argue has profound consequences for design, as significant as the shift from craft to industrial production.

And What Do These Things Do?

Things are also now playing very different roles than what they used to when they were only things for providing utility to end users. Surveillance/platform capitalism has become the overarching force and logic driving the way most industrially-produced connected things operate and the functions that they perform. They are not only or even primarily things for use and users. They are things that render users and their activities visible, comparable, computable, accessible, and potentially even modifiable for industrial actors in a position to benefit from this god's-eye view and access. These are processes fuelled by data that is produced (never raw) for particular purposes, tuning actors and entities in massive real-time cybernetic feedback loops in which everyday life and reality are mined for resources that can be processed to generate value elsewhere.

These dynamics do not negate the very real value that connected things can provide. They can indeed be quite useful, even delightful, scaffolding types of creativity, connection, and understanding that would not be otherwise possible. Yet at the same time unease with these things seems to be growing, as many now struggle openly with managing attention when devices always seem to be clamouring for it, and with clawing back some level of privacy from things and systems that seem bent on preventing us from doing just that (while technically remaining within existing legal frameworks that have not even begun to meaningfully keep pace with these changes).

This leads to considering the role of design in all this. Because the “dark patterns” of interface design that steer users toward the desired ends of corporate producers, the strict separation of end use from primary purpose, and the user-facing shells that conceal what things actually do are made by design. And yet, with a few exceptions (e.g., the discussion about “dark patterns” of interface design (#darkpatterns), efforts to certify IoT devices as “trustable” (Trustable Technology Mark), the field of design at large does not seem to be adequately addressing this.

Darker Patterns

There are at least now discussions of machine learning and AI as design materials; and interaction designers also work more with data scientists as design work is increasingly done through data-driven progressive optimization rather than careful crafting of complete and final products (in the way that industrial design worked under industrial capitalism and systems of mass production). But rather than being central to industrial production, as it was under industrial capitalism, design seems to be on the side-lines in relation to where much of the action currently is.

*Interaction design now designs
only the mining tools*

In fact, if we look at the basic position and role that industrial design was in—that of mediating relations between production and consumption—it becomes clear that it is no longer the central actor in this position. If human experience and more general reality is the resource that is mined as a data-fied resource and used to produce audiences, behavioural futures markets, and means of influencing behaviour as *products*, then it is data science and analytics that is mediating these new basic relations of production and consumption. Interaction design now designs only the mining tools—in the form of connected things intended to quickly disappear into the fabric of everyday life.

Of course, it can be protested that interaction designers do much more than that, which is true to a certain extent. Their typical concern for supporting the richness of everyday life continues to make them quite useful when designed things being enmeshed in (and monitoring and influencing) people’s every day is a corporate objective. And things that are fluid assemblages and their design are also not inherently tied to surveillance capitalism. Designers can and do work to design things that allow users to preserve their privacy and integrity.

But as Shoshanna Zuboff’s recent work shows, surveillance capitalism is now the dominant logic and form of capitalist accumulation. And once we understand the fundamental new logic of surveillance capitalism, as Zuboff so quotably puts it:

It becomes clear that demanding privacy from surveillance capitalists or lobbying for an end to commercial surveillance on the Internet is like asking Henry Ford to make each Model T by hand. It’s like asking a giraffe to shorten its neck or a cow to give up chewing. Such demands are existential threats that violate the basic mechanisms of the entity’s survival. How can we expect companies whose economic existence depends upon behavioural surplus to cease capturing behavioural data

voluntarily? It's like asking for suicide.

In this new landscape where “data is the new oil” and everyday connected things mediate the production of this basic resource, we might hope that interaction designers will at least be conscientious in designing to resist the worst forms of exploitation and abuse around data production. This is indeed an important topic to now include in interaction design education and professional discourse. Yet in industrial contexts and outside of more one-off artistic productions (if even that), we must also be realistic about the fact that these types of efforts directly contradict the business models that companies (that hire designers) are driven to follow in order to survive in the current surveillance capitalist marketplace.

Production and Consumption, Take Two

[...] there are now serious efforts to turn the capabilities of design toward envisioning and transitioning toward sustainable futures

Design has been here before, caught between its potential and the industrial imperatives that sustain its existence. It still is in fact. Under industrial capitalism, industrial design facilitated the production of consumer goods to fuel the endless appetite for consumption in wealthy parts of the world that was the foundation of economic growth (and cause of unevenly distributed benefits and damages). Recognizing this now in the context of (designed) unsustainabilities, there are now serious efforts to turn the capabilities of design toward envisioning and transitioning toward sustainable futures. And yet, these efforts exist in parallel to (and with far fewer resources than) business as usual in industry—or at least, more as usual than is even remotely desirable given the magnitude of the problems and required changes. While design has rich capacities to grapple with complexity and design for ecology, it has been mostly tethered to responding instead to the demands of the capitalist economic system rather than the larger ecological system in which it is embedded and on which it actually depends (as Joanna Boehnert has incisively articulated).

If industrial capitalism called mass production and industrial design into being and sustained them, it might be argued that surveillance capitalism has called fluid assemblages and big data analytics into being and sustains them. This is not to say that things could not be otherwise. Design in a broad sense is about configuration of the artificial and care for the possibilities and futures that it opens up or forecloses, and for whom.

In Search of Design, in Search of Possibilities

Things that are artificial could by definition be otherwise. As design theorist Clive Dilnot beautifully writes in concluding his chapter in the book *Design as Future-Making*:

The paradox of our time is that we have made that which we cannot yet think. The artificial, understood aright, is our possibility as well as the source of the dangers that beset us, though these lie, as we have seen, as much if not more in the attitudes we bring to the artificial rather than to any essence of the artificial. Thinking the paradox of the artificial — in action, through the manner in which we remake the world — is turning the prosaic nihilism of our age towards a resonant affirmation of what is possible for our history beyond accumulation and

catastrophe. Reasons to be cheerful? Not quite. Reasons for possibility? Certainly.

What, then, is the role of design in relation to the thoroughly artificial edifices, mechanisms, and everyday things of surveillance capitalism? Is it to rearrange pixels while possibilities for other ways of ordering economic and sociotechnical systems become submerged, to keep us as users distracted while our lives are extracted and their data shadows sold to the highest bidder? Is it reasonable to pursue the possibilities that connected things that are fluid assemblages offer while ignoring the very real entanglements that pull their operation inexorably toward participating in modes of dataveillance?

Surveillance Alternatives, by Design

Surveillance capitalism has become the primary logic acting as a centripetal force pulling even more traditional companies into its swirl, from which they spin out increasingly similar products. We need alternatives. And thankfully, design is in the business of exploring alternative possibilities.

[...] an understanding of what is actually going on in the current sociotechnical landscape allows for more sharply envisioning real alternatives [...]

The fact that current developmental trajectories have been so unidirectional can also be seen as an incredible opportunity, leaving a wide-open space of possibilities that have for the most part not yet been properly explored. Moreover, an understanding of what is actually going on in the current sociotechnical landscape allows for more sharply envisioning real alternatives, rather than just more superficial variations on the same theme.

For example:

- Instead of production of behavioural data for prediction and control, data could be used to generate value that is fed back into products or leveraged for social good (however complex that might be to operationalize).
- Instead of development of IoT driven by the push to colonize everyday life with new supply routes for behavioural data, development could instead respond to actual needs (which might or might not call for living in a community of “smart” objects).
- Instead of a drive for more data to achieve a total “god’s eye” view, a multiplicity of partial perspectives (perhaps integrated when there is consent and equitable distribution of benefits) could be the default.
- Instead of emotion detection for manipulation, we could try to design emotionally intelligent things capable of relational sensitivity and discretion, oriented toward assisting people in protecting their privacy and integrity rather than violating them.
- Instead of dark patterns and interfaces that conceal what things do, things could provide meaningful transparency and mechanisms of intervention when they need to “unlearn” something.
- Instead of profit for a few through surveillance revenues, value could be distributed more equitably and transparently among stakeholders.
- Instead of humans and worlds rendered as data objects, data could be treated as only one—always constructed, contestable, and partial—mode of sense-making in the world.

- Instead of relations of exploitation and manipulation, things could be designed to mediate relations of respect and willing collaboration for some mutually desirable end.
- Instead of aiming for influence leading toward user stupidification (Michel Puech's excellent neologism), things could be designed with a disposition toward supporting development of personal capacities and collective sustainability and flourishing in the pluriverse (Escobar, 2018).
- Instead of trying to get people to ricochet through their lives in response to intricate sequences of nudges, things could be designed to support and respect the status of humans as sovereign over their own (qualified) selves and (existential) projects.

Idealistic? Absolutely. But arguably some form of action-oriented idealism is necessary in order to fully recognize our current reality in which these are radical propositions, and to begin to find our way out of it – and toward something else.

Design often seems in a way both too big and too small. In its world-making capacity it can imagine futures that are too grand, too distant, or too exotic to have much of an impact in the present; and in its more quotidian professions, it is often (kept) too small to substantively affect larger systems in which it is embedded at scale. Yet in terms of grappling with the artificial world and finding its more enlightened and diverse life-affirming possibilities, design in the truest sense is needed now more than ever.

3 Tips to Escape Surveillance Capitalism

Choose and support alternatives. Use products and services that do not operate according to the logic of surveillance capitalism, and pay for them or support in other ways when you can.

Support Alternatives

Develop and somehow put out into the world ideas for how things could be different and better—not just at the level of interface and interaction, but in terms of what things actually are and do.

Design Alternatives

Remember (and remind others) that there are alternatives. Nothing about surveillance capitalism is inevitable or inherently tied to technological development. Other worlds are possible.

Remind others

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Author

Trusted Technology from Your Living Room to Your City

Peter Bühr

At the Edge of Our Vision

The most interesting things often happen at the margins. That's where pioneering work is often done: The places where you have to squint your eyes just so to see a tiny bit of excellent innovation that might guide a much bigger change down the road. A tiny bit of movement at the edge of your vision today, a global movement tomorrow.

Joyful Spies

Surveillance capitalism strips us of basic rights: It is a force that actively undermines our agency as users, citizens, humans

Surveillance capitalism strips us of basic rights: It is a force that actively undermines our agency as users, citizens, humans. And to add insult to injury, this particular flavour of late-stage capitalism doesn't even set out to do this, it's simply a side product of its mode of operation. We see this play out across the whole operating system of our society, across the many layers of the societal stack.

From the privacy policy to the ad or transaction-based business model all the way to its built-in microphone, every layer and input that brings this device (and its supporting infrastructure of servers and data mining operations, of machine learning and human transcription) is aligned towards maximum revenue generation.

Many connected products manifest this in physical form, from the underlying policies and business models to the organizational structures and cultures built on top of them, and the business/design/strategy processes on top of them all the way to the features of any given product. Think, for example, of a smart speaker with a built-in voice assistant: From the privacy policy to the ad or transaction-based business model all the way to its built-in microphone, every layer and input that brings this device (and its supporting infrastructure of servers and data mining operations, of machine learning and human transcription) is aligned towards maximum revenue generation. It also happens to spy on us, nudge us, betray us — often while simultaneously bringing great convenience or even joy. Welcome to the complex world of the 21st century.

But like any human-made system, we can decide that enough is enough, and change course. We can assert our agency, and adapt our societal systems to protect and enhance it going forward.

After all, you don't just summon a perfect thing into existence: You create the conditions that allow for a product to be good.

When we launched ThingsCon's Trustable Technology Mark1 a year ago, we set out doing just that in one small (but not tiny!) niche: Consumer products. Our trustmark for IoT aimed to give external validation to products that put user first. To get there, it offers guidance. After all, you don't just summon a perfect thing into existence: You create the conditions that allow for a product to be good. The path there is through the research and design process, through aligning the incentives of the business with those of the customers (who should mostly be the users, and only in rare exceptions a third party), through building in strong failsafes. Our trustmark is one of many tools that can help guide this journey.

Tech We Can Trust

In the year since launching our own trustmark, we've learned a lot — and a lot of it, we learned the hard way. For example, it is hard to retroactively make a product fit an evaluation scheme: Much harder than to design against that new standard from the beginning. So, we haven't had many opportunities to grant the Trustable Technology Mark to products. Organizationally, too, we quickly hit our internal capacities for reviewing applications and updating the evaluation criteria. Like ThingsCon, the trustmark is a volunteer-driven initiative, which puts some hard limits on the time spent on the project. We're working both on simpler tools to apply the trustmark thinking early on in the design stage, and on building up our organizational capacity. Both will take time, but we'll improve step by step.

That said, the trustmark has already had great positive impact — if not necessarily in the ways I would have expected.

That said, the trustmark has already had great positive impact — if not necessarily in the ways I would have expected. The trustmark conversation opened a great number of doors. We had fruitful exchanges with many other organizations that have been looking into launching trustmarks in this space, and been invited to give input into policy research around trust, trustmarks, and consumer protection. We've also been invited to participate in conversations that would allow us to bring what we learned to other fields.

No Way Out

The underlying principles that guide the Trustable Technology Mark — increasing transparency and accountability, improving data practices, empowering users — all revolve around one central idea: That users' rights and needs come first.

And that core idea isn't just relevant for connected consumer products. Far from it! Turns out it's as relevant, if not more so, at a larger scale, too: Public space. The smart city discourse benefits tremendously from these viewpoints that have evolved out of the ThingsCon discourse — and particularly our trustmark research — over the last 5 years. The Trustable Technology Mark opened many doors into that particular discourse.

In fact, if it happens in public space, there is no way to opt out.

Where consumer products are mostly a voluntary *opt-in* — if there is a smart speaker in my living room, then it's there because I made a conscious decision to put it there! — rolling out connected sensors and other devices connected by algorithms in public space are *not opt-in*. In fact, if it happens in public space, there is no way to opt out.

So if there is any IoT to be deployed in our cities — if we make them *smarter* — then we need to get this right from the beginning. Anything that goes wrong, goes wrong for potentially everybody.

You create the conditions that allow for a thing to be good: To create the conditions for better smart cities, we need to overhaul procurement practices and guidelines, impact assessment, and do whatever else it takes to do the same for the urban public space that we've been doing for connected consumer products: Increase transparency and accountability, improve data practices, empower citizens.

Some of that is already in the making, thanks to opportunities that the

Trustable Technology Mark created. I don't think there will ever be a Trustable Technology Mark for cities, but that doesn't mean that our learnings from the trustmark can't continue to help making smart cities better by putting citizens first.

We Expect Better

[...] *and that rock bottom isn't good enough*

Whatever will happen to the Trustable Technology Mark over the next few years, for now I'm convinced that it is as relevant as ever: With this trustmark, we plant a flag that shows that there's a spectrum of expectations, and that rock bottom isn't good enough. That *we can do better and expect better*.

The most interesting things often happen at the margins. I consider the products we recognize with the Trustable Technology Mark to be that kind of pioneering work at the margins. I see an opportunity for smart cities to follow this same lead, to be citizen-first just like the trustmark products are user-first. And I believe that these examples are harbingers of things to come — of *good* things to come. Right now, they're happening in the margins.

If you squint your eyes just so, you'll see a tiny bit of movement at the edge of your vision. Pay attention, it just might turn into a global movement tomorrow.

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3 Tips to Escape Surveillance Capitalism

Public administrations from municipalities to the EU level constantly run consultations (i.e. requests for input) from citizens and other stakeholders. Not many people participate, which is both bad and also a huge opportunity. Since feedback is usually minimal, the few voices that participate have all the more weight. Often, these consultations inform the terms and conditions that will shape the procurement decisions down the road. So, this is where you can have disproportionate impact.

Give Input!

Ask the makers of your favourite products to apply for a consumer trustmark. Could be the Trustable Technology Mark or another one, as long as you tell them you care about basic rights like privacy, data protection, security, and transparency.

Demand Better!

If you see camera surveillance in public space, send a Freedom of Information Act (FOIA) request asking (politely!) what concrete measures were taken to protect citizen data and anonymity. Simple tools are available in many countries today, and it's either free or cheap.

FOIA!

Author



Peter Bihr, explores how emerging technologies can have a positive social impact. He co-founded ThingsCon, a not-for-profit that advocates for responsible practices in Internet of Things (IoT), and is the Managing Director of The Waving Cat, a boutique research, strategy & foresight company. He blogs at thewavingcat.com.

Civil Hack Back: Hack, Tweak, Delete Your Digital CV!

Timo Jakobi

2018 arguably was a good year for privacy of millions of people. The GDPR was put into effect, and thus were new safeguards for user data. And 2019 continued this winning streak for privacy.

Around the globe, GDPR has sparked legislative initiatives for handling privacy for the connected society.

Moreover, at least in Europe, there was quite some jurisdiction in favour of privacy – and the user! Not least, the infamous cookie banner will likely soon be a relic of the past. In this vein, it also looks much like the sun may be setting for opt-out of tracking online. Also, it can be seen that throughout the EU, institutions are willing to increasingly make use the range provided by law in terms of issuing penalties for mishandling data.

Such handling and especially case law interpretation of new legislation is particularly interesting as it often serves as a frame of reference and thus may shape future jurisdiction.

Still, there are many things left open and unclear and many ambiguous terms or concepts need to be filled with examples, best practices and thus lower boundaries. Take for example the “data subjects” (that would be you then) rights: Most prominently, there are:

- the right to access data,
- the right for correction or rectification,
- the right to erasure (more famous as “the right to be forgotten”),
- the right to restriction of processing,
- the right to data portability,
- and the right to object.

*Hand on heart: Have you,
until now, made use
of any of these rights?*

Hand on heart: Have you, until now, made use of any of these rights? Why not? In my research, I have already asked many people, and it looks, that people are uninterested often times. When going through the process with participants, it often is quite a hassle: Many organizations still do not have actual processes (not even speaking of automated ones...) to gather data they hold about a customer and provide it to them. Organizations would also often times take their time (they have 30 days) to answer your request: What is meant to be practical compromise for smaller companies, to handle requests, provides a loophole for larger companies, making data requests less attractive.

If you follow through, however, next disappointment is just around the

corner: You will get raw data. In excel or pdf files, even as pictures. Even google provides you with HTML files, holding plain masses of text, or JSON.

The sheer mass of data is overwhelming to say the least. Also, the folder structure makes it pretty tiring to walk through everything. Despite having everything, it feels like having nothing: Nothing to understand, nothing actionable. Google, for example, provides you with all the GPS coordinates you have every sent when navigating with google maps in a JSON file. As a hobbyist programmer, you might be enthusiastic about what you can do with this data. Think about what your parents might be able to do with this. A key question was: What do they know about me now? For people to gain an overview, what this data actually contains in terms of information, they need tools to process and visualize that data. We urgently need automated tools for consumers, to process and visualize data in a user-friendly way. If the right to access data will not provide it, others need to step in: Consumer protection agencies, national legislation, the programming community, researchers.

We urgently need automated tools for consumers, to process and visualize data in a user-friendly way. If the right to access data will not provide it, others need to step in: Consumer protection agencies, national legislation, the programming community, researchers.

Still, beyond caring for “transparency” (such a crazily overstressed term – what’s that anyways?), users remain at the mercy of how data processors (that’s e.g. the provider of a data-based service) will look at the data provided. Given that consumers do want to participate in a digital service, they barely have an opportunity to influence, alter or shape the data they are providing.

This fact is getting more and more crucial as the feedback loop between data analysis and real-life implications is closing in. Fitness trackers are teaming up with health insurance providers, connected car technologies are used for individual car insurance tariffs, not to mention the manipulation of political views or even votes, or the potential for social surveillance and scoring systems as just recently activated in the Peoples’(!) Republic of China. In the western world, there are only the first, seemingly harmless, pieces: However, at some point, your landlord may also have an interest in looking at how you drive because of some weird probabilistic correlation with your monthly rent payments, which may also be of interest for your employer, and so on. It will always be voluntary, yet, at some point, it will just be inevitable to get an insurance, a job, a home. What is being introduced from top down in China, the free market is likely to give to us by our “free will”.

Writing this piece, I have spent some time thinking of an analogy for this absurd situation: Not being able to maintain how you are perceived by others, at all. It is quite telling that I could not come up with one in the non-digital space. The closest I could get, actually was an absolute organization: Jail. Prisoners and Guards. Might sound cheesy. Agreeing or not: It is an uncomfortable situation to be out of control of your own representation. So, what do we do about this? From my perspective, it is time to get active and start to actively shape your digital footprint.

It is an uncomfortable situation to be out of control of your own representation.

Use your rights; design your digital CV, if life makes you have one. Beyond tools to tell you what organizations know about you – an important puzzle piece to understand how effective you are in your civil hack back – we need tools and creativity:

I want to see dogs with fitness trackers to maintain your daily step training. I want to see athletes providing data of fitness trackers for the public. And if I am about to provide data to my health insurance, let's make sure it's from the time I trained for this one run back then!

I want to have a tool that automatically makes me who I need to be to get the lowest price for my new whatever-it-is on the internet, may that be an osx-edge-user or a mobile-opera-cyanogen-android browser fingerprint.

The German OpenSchufa project has demonstrated some of the potential merits, albeit not completely successful. I want to know, what data I should provide to boost my credit score. How do I get the lowest interest rate? Companies use data points and they are only provided by people. The people can create this data, shape, scratch, delete, tweak it.

Companies use data points and they are only provided by people. The people can create this data, shape, scratch, delete, tweak it.

Snap it, work it, quick – erase it
Write it, cut it, paste it, save it
Load it, check it, quick – rewrite it

daft punk – Technologic

Everybody is doing this with her CV all of the time: My prospective boss – or anybody for that matter – does not need to know what I did in my parents' basement for the last three years. I am having the interpretive sovereignty over my life, when talking to people I don't know. I define how others are to see me, by leaving out, emphasizing, passing things under the carpet or accentuating. Why shouldn't I be able to do this in the digital sphere? The rights are there! Let's use them to let them become tools for the people.

3 Tips to Escape Surveillance Capitalism

Make use of your rights: get some data take outs and explore your data.

Explore Your Data

Hack back: Tweak an account of your choice with data of your choice using the right to rectification.

Hack Back

Tell others how you did it, write a piece of code or collect some nice data and publish it under Creative Commons for others to use.

Build and Share



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