A QUICK GUIDE
TO THE
SLOW NET

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INTRODUCTION

Two years ago, I was agonizing over whether I should continue my engineering career or pursue something new. I was pretty over engineering at that point, but it's not because I hated doing engineering work. The issue was more about the expectation that engineers solve problems, but don't necessarily play a role in deciding which problems should be solved. How is it possible that those who implement solutions are discouraged from questioning the implications of their work? I ended up seeking a path where I could explore these ideas without fully abandoning my technical background. This led me to NYU ITP.
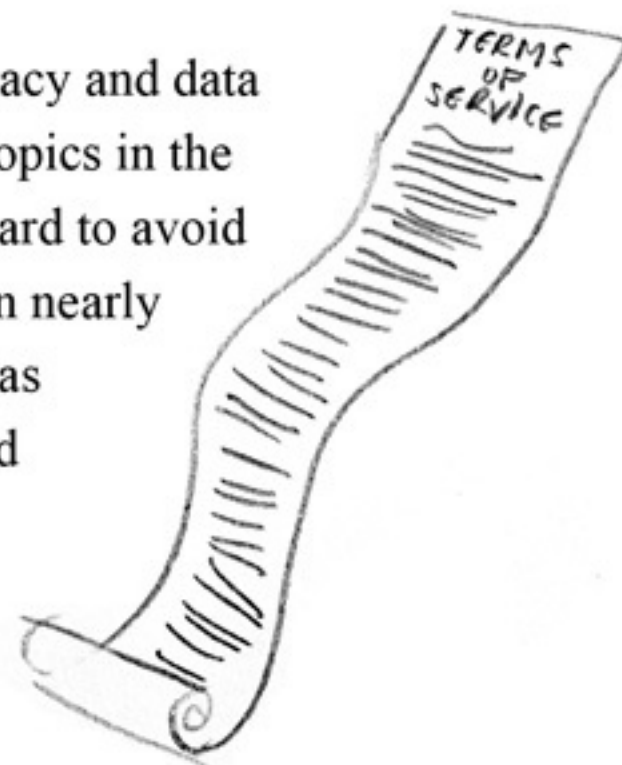
In my personal statement for the ITP application, I asked what it meant to be a contemporary designer. A more relevant question now is: What does it mean to be a contemporary technologist? I've found that it means using my understanding of technology to contribute to a more equitable, sustainable, and joyful society. And that means considering the impact of our

work beyond what we can see on the surface and looking to see where things fit into the larger infrastructure. It's something that I think all designers, engineers, technologists, and makers should care about.

We always strive to design better experiences, and lately that seems to center on making things more convenient, smoother, and faster. That's great most of the time, but in regards to personal data, having a frictionless network infrastructure might not be best for us. This zine is one third of my thesis, Slow Net, a series of experiments that explore how slow networks can be used to protect against data-collecting entities that threaten our autonomy and influence our identities.

WHAT WE ALREADY KNOW ABOUT DATA COLLECTION

Concerns around privacy and data have been prevalent topics in the news lately, and it's hard to avoid thinking about it when nearly every site you go to has a cookie warning. And maybe if you've ever bothered to skim the Terms of Service before hitting agree,

We have updated our privacy policy to be more clear and meet the new requirements of the GDPR. By continuing to use our site, you accept our revised Privacy Policy.

OK ✕

you would have an inkling that companies are getting more than your e-mail address. I made a quick FAQ to go over the basics.

What data are being collected from me?

There are data that you might voluntarily give, like an e-mail address, and then there are data that people unknowingly generate. For instance, there's data about your device like location, network info, and browser type. There's also data from interactions like your cursor position, clicks, likes, shares, connections to other people, and search inputs. Connected smart devices with sensors can collect data from microphones, cameras, accelerometers, and Wi-Fi connections. There's more, but you get the idea.

Who is collecting my data?

Companies like Google, Facebook, and Amazon track you when you are using their platforms. Third-party trackers, such as Google Analytics, DoubleClick (owned by Alphabet), and CloudFront (owned by Amazon), also collect your

data across multiple sites. Data brokers, such as Experian, USDate, and Spokeo, might amass data, some of which is publicly available, and sell it. The government also collects your data for the stated purpose of national security.

Who is selling my data?

Data brokers actively sell data. Some companies say they don't sell your data, but they might sell insights or products that are based on the data they've collected from you.

How do trackers know who I am online?

A unique browser fingerprint of your behaviors,

screen size, font list, device type, and other readily available info can be used to determine who you are even on sites where you don't need to log in.

Why are my data being collected?

Data is valuable. Many companies have found ways to monetize your personal data, especially for ad targeting. In 2018, Alphabet, Google's

parent company, reported that 84% of their total revenue came from advertising [1].

How are my data being used or analyzed?

Data might be analyzed with algorithms to generate different insights about your habits and preferences, resulting in a profile. Targeted advertising is a common example of this info being used to determine what ad you're most likely to interact with. Data can also be used as is. For instance, some dating sites prepopulate profiles from other online dating platforms to make it seem like there are more people. Sometimes data is collected and repackaged into different datasets and then sold by data brokers.
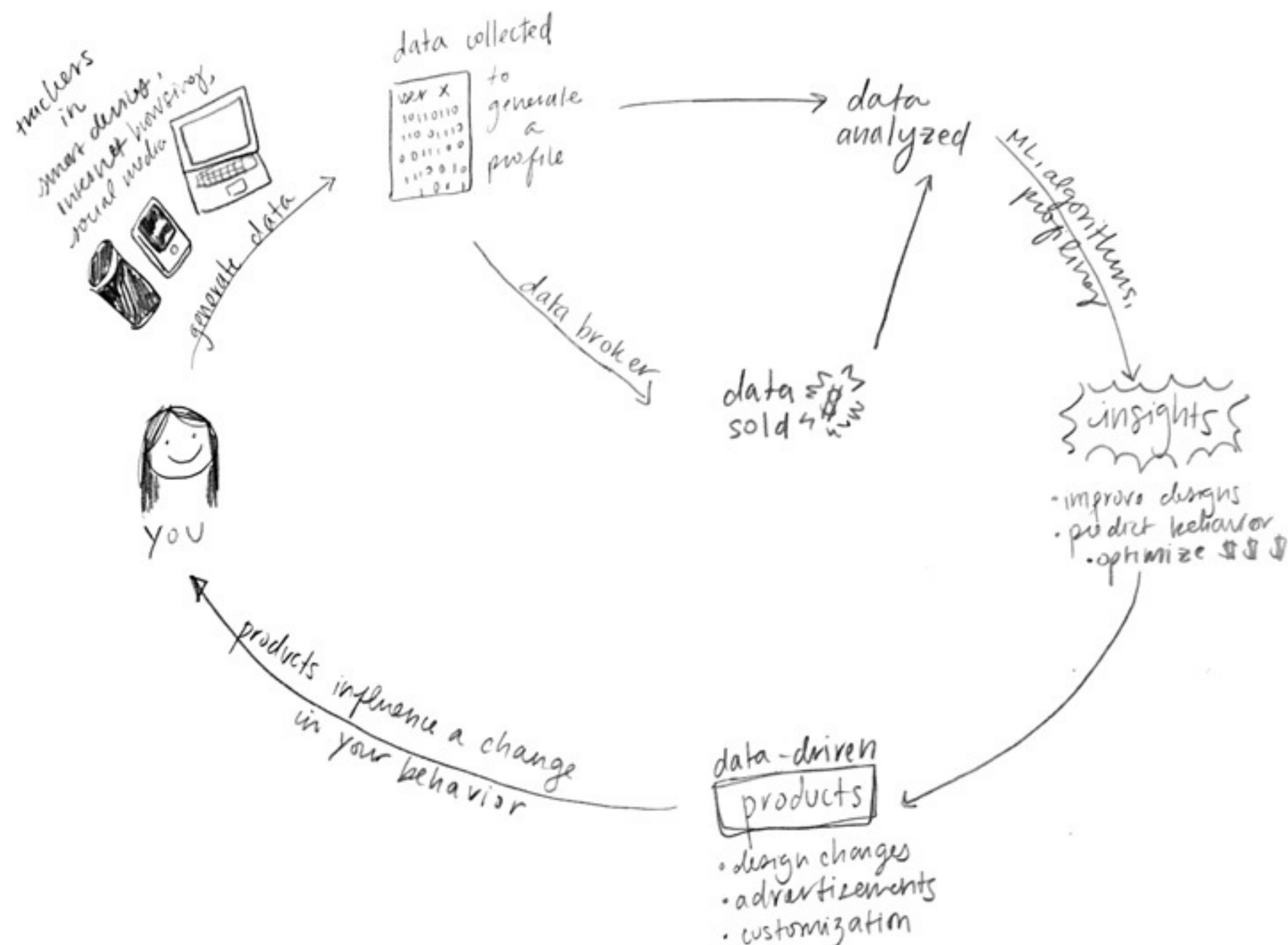
Where does my data go?

Go to the next page to see a rough cycle of what happens to personal data.

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THE CYCLE OF PERSONAL DATA

trackers in smart devices, internet browsing, social media

data collected to generate a profile

generate data

data analyzed

data broker

ML algorithms, profiling

data sold

insights
- improve designs
- predict behavior
- optimize $$$

YOU

products influence a change in your behavior

data-driven products
- design changes
- advertisements
- customization
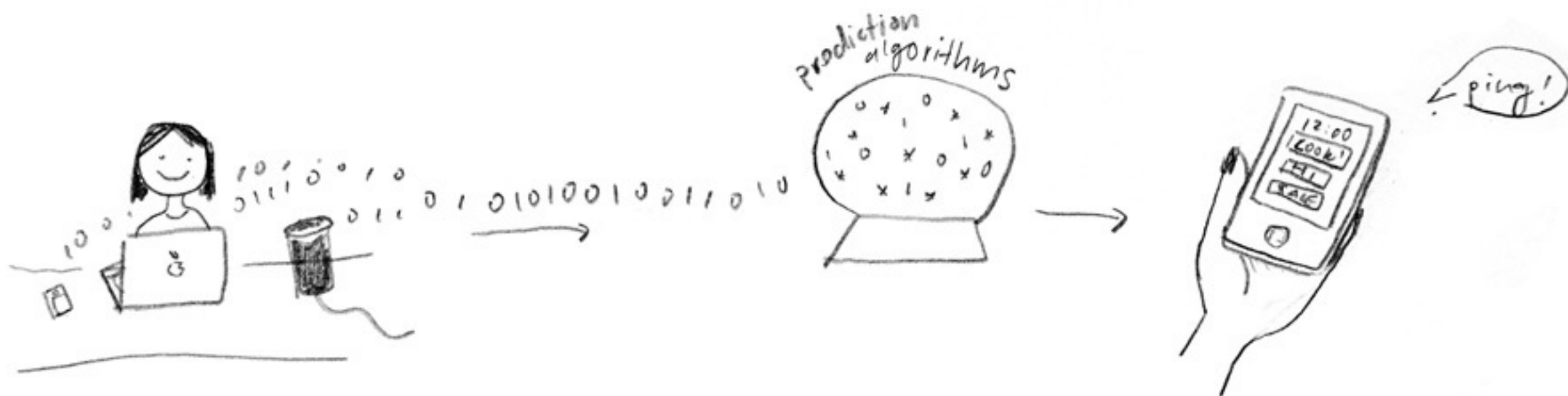
DATA BASED PREDICTIONS
and the
PRIVATIZATION OF OUR IDENTITIES

Through personal data, companies can understand people at a granular level in real time. Portions of these data are truly used to improve our experiences, but a vast amount of it is used to influence people's behavior at scale.

Most obviously, companies have made their communications technologies indispensable to us. By using our data, they can create smooth,

hyper-personalized experiences that entice us to spend more time on their platforms. Good examples include features like endless scrolling of newsfeeds or autoplay on streaming platforms to continuously give users individually tailored content. By working to capture our attention, companies are able to capture even more data. More personal data equals better ability to predict our future behaviors.
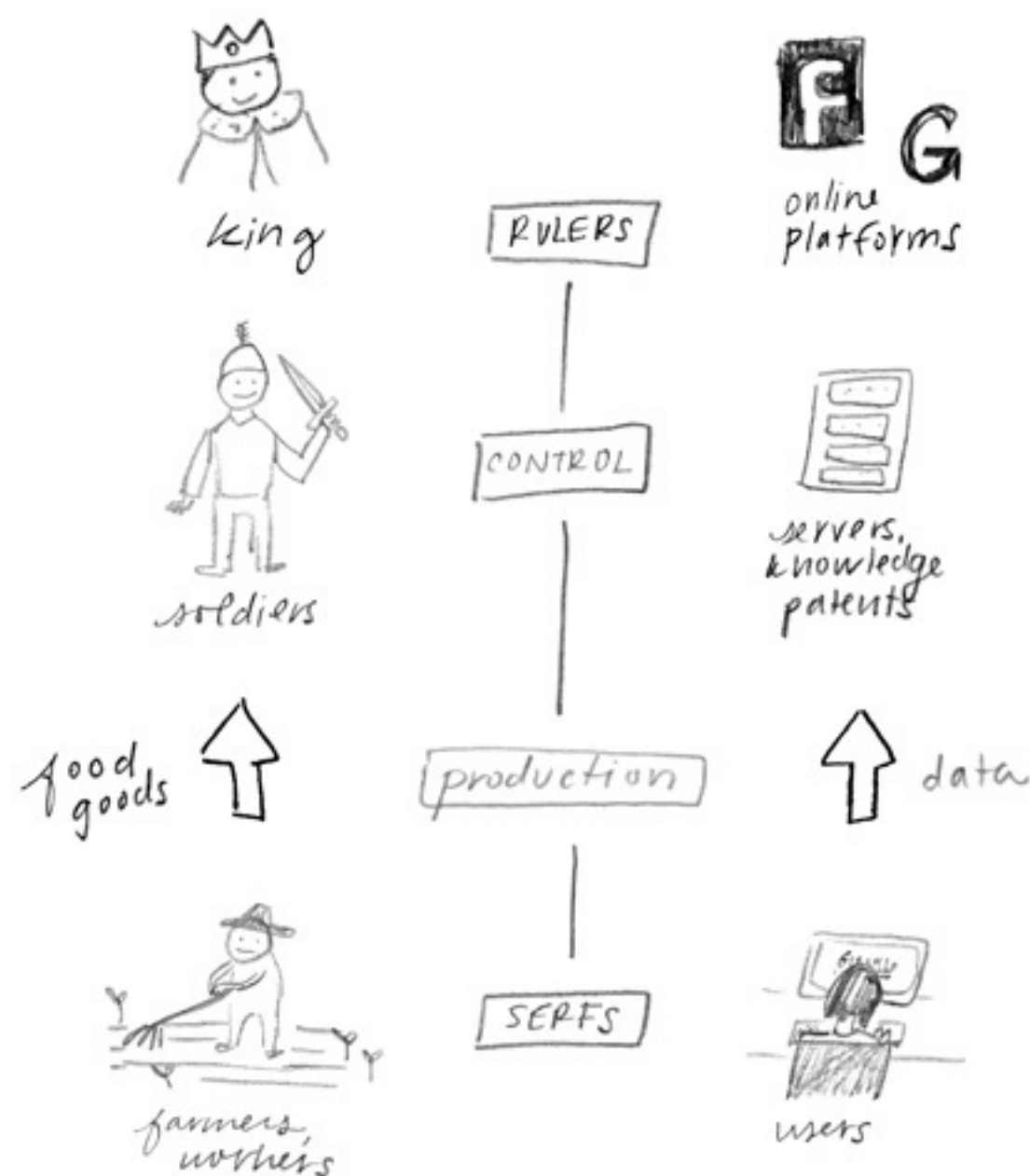
If companies can predict your next steps, they can intervene and then guide you towards actions that align with their economic interests. A common example of this is when an app sends a push notification to your phone that then diverts your attention to something else. Instagram might grab your attention with a notification about someone you follow, and then before you know it you're distracted with influencer content and ads. This seems kind of innocuous, but think of how masses of people could be influenced to fulfill certain actions or believe certain things through interventions that target specific profiles of people.

The combination of these companies' abilities to collect and gatekeep troves of data, capture our attention, and influence our behaviors amounts to a lot of control in their hands. So much control that the structure of this arrangement starts to reflect that of a feudal society. And we are the

data-generating serfs at the bottom.

The different pieces of our identities have become quantifiable data inputs to an economic system. When I talk about identity, I don't only mean pieces of info like your address or credit card number. I am also talking about things that make up your personality - feelings, values, habits, interests, etc. These aspects that make us unique start to matter less because they are in service of an economic process rather than a social one. Humans become interchangeable collections of data and our differences only serve to provide diversity in a dataset. Our identities become privatized. As Jack Self states in his essay Beyond the Self, "individualism becomes merely the illusion of diversity, where the identity politics of infinite and marginal differences dissimulate the mechanisms of network flow

that are transforming us all into a homogenized, standardized, globalized population of data providers" [2].

What does this mean for us? Are we really who we think we are? How much of our personality and actions are shaped by the influences of companies who horde our data? If this capitalism-driven commodification of ourselves into data - what Shoshana Zuboff calls "surveillance capitalism" - continues at its current pace, our autonomy is at stake. We're in danger of becoming data laboring serfs at the control of increasingly wealthy and powerful companies.

SLOW RESISTANCE

The power imbalance between companies who hold troves of information and us, the users, is vast. It's the kind of problem that can't be solved in one fell swoop. Companies like Facebook, for instance, have done a great job normalizing the cycle of gaining and breaking our trust when it comes to privacy. Essentially, they've been able to do whatever they want when it comes to profiting off our data.

What form of resistance can we take? Could we boycott using services and platforms
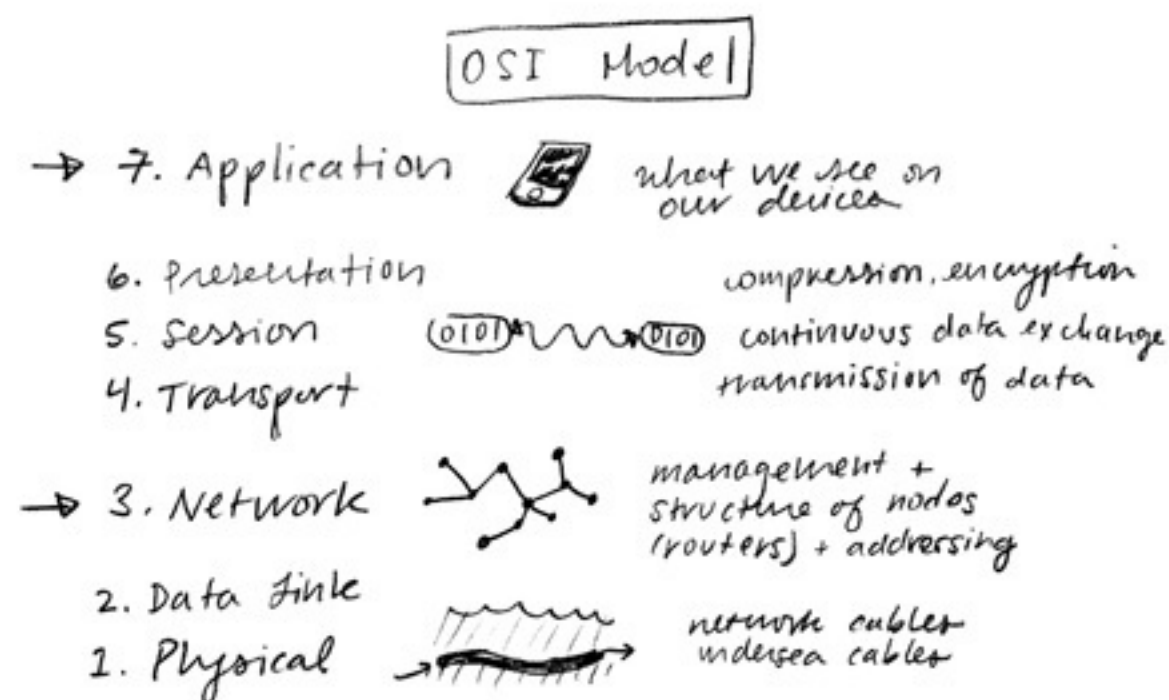
that exploit us? This is an unrealistic idea, even for me. Cutting out social media would make it harder to communicate with friends and family. Avoiding Google would be inconvenient, especially since NYU is tied up in Google apps. And so many of the sites we visit rely on Amazon Web Services (AWS), which makes it nearly impossible to evade. Boycotting is an action taken by consumers, but since we are the data laborers in this system, perhaps it makes more sense to think like a labor union.

According to the Industrial Workers of the World (IWW), slowdown strikes have a "long and honorable history" dating as far back as 1899 [3]. Slowdown strikes are when workers deliberately reduce their output and carry out their duties unproductively, which puts pressure on management to meet their demands. This tactic is especially effective when workers are a critical part of the supply-chain and inefficiency results in significant economic loss. Considering that these criteria apply to our role as data laborers, a similar strategy could be effective to resist influence from greedy companies.

Because real-time collection of data is enabled by faster network connections, we could

OSI Model
ISO

→ 7. Application — what we see on our devices

6. Presentation — compression, encryption
5. Session — continuous data exchange
4. Transport — transmission of data

→ 3. Network — management + structure of nodes (routers) + addressing

2. Data Link
1. Physical — network cables, undersea cables

enact our own slowdown by deliberately reducing the speed of these networks. There are two main layers of the OSI (Open Systems Interconnection) model that I'm interested in: the application layer and the network layer.

Less is More: Slowing Social Networking in the Application Layer

One of the most important uses of the Internet is communication. Our online conversations and interactions generate a lot of information that indicate our feelings, what we're doing, what we want, and more. As of April 2019, Facebook clearly states in the data policy section of its terms of service that it's collecting data from your communications.

"We collect the content, communications and other information you provide when you use our Products, including when you sign up for an account, create or share content, and message or communicate with others."

This includes Instagram, Messenger, WhatsApp, and all their other products. Other companies have similar statements as well.

Applying a slowdown on social media platforms would be about changing the design of their users' experience. Instead of trying to maximize user engagement, what if a platform designed their interfaces so people are

discouraged from lingering online? Imposing time constraints and restricted functionality could force people to be more mindful of their actions. Simpler web design without extra features could allow users to focus on a single task, thereby encouraging people to do their business and move on. This might be perceived as inconvenient, but if users can accept this kind of change it would actually buy them more time to spend offline. We could be less obligated to our devices while still communicating what we need to say. An added bonus of simpler, ad-free, tracker-free sites is that they require less bandwidth and electricity to serve. Less excessive engagement on social media results in less data generated and collected.

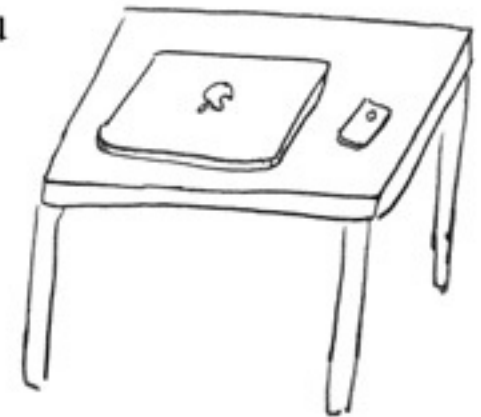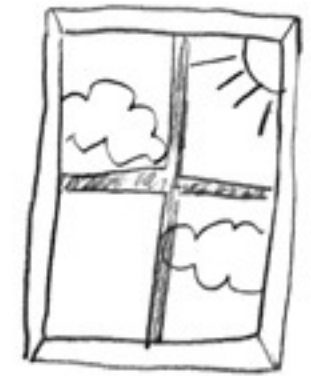## Breaking Real-Time Data Flow: Slowing the Network Layer

Almost everyone has a router and modem in their home that connects their devices to the Internet. The router is an important point where someone can affect incoming and outgoing data for all devices that are connected to it. Introducing some friction here by setting limits on upload and download rates would prevent data trackers from capturing true real-time data. The bottleneck would create a delay and work against anyone trying to influence you through an in-the-moment intervention. A limited bandwidth internet experience, reminiscent of dial-up days,

would force users to use their internet time more deliberately since it would be more difficult to load up multiple tabs or constantly switch to different websites. This would all culminate in less data output and a decreased rate of data capture.

Depriving data collectors of our personal data is one way to start fighting against the feudal power structure taking shape. It is only the start of how we can reclaim ourselves from the influence of companies who manipulate us.

CREATING SPACE TO BECOME OURSELVES

A byproduct of a slow network is idle time. Waiting for something to load seems like an annoyance, but it creates opportunities for other activities or to simply process your thoughts. Instead of continuously consuming content, it would be possible to contemplate each thing you experience - how you feel about it, why someone created it, what it means to you. This could deter people from getting

caught up in echo chambers or posting hurtful messages. The slow network's built in wait could give you time to form opinions and understand other people better.

Additionally, the frustration of waiting could encourage you to your to limit your Internet usage. As worries about tech addiction and our reliance on devices have become more frequent, several people claim that doing digital detoxes where they spend days, weeks, or months without their devices have been positive, perspective-changing experiences. In your increased offline time, you could connect with other humans IRL, get to know yourself better, and build an understanding of your personality without the influence of

greedy companies.

Cultivating and understanding your identity is not only beneficial to yourself. In his essay The Nature of Democratic Morale, Gordon Allport, a psychologist and researcher on human personality, wrote, "in a democracy every personality can be a citadel of resistance to tyranny" [4]. The idea that our individual opinions and actions make a difference and support each person's autonomy in a democracy is extremely important. That makes it all the more important to resist personal data collection and its negative impacts on society.

FINAL THOUGHTS

To quickly summarize, real-time collection of data is enabled by fast Internet speeds, so it is possible to use purposeful inefficiency to slow down the network to fight against companies that profit from us. At the application layer of the OSI model, changing the user experience design of apps would reduce engagement, thereby reducing the amount of personal data generated. At the network layer, limiting bandwidth prevents real-time data collection and prevents companies from influencing your behavior in the present. These slowdowns would work by:

1. Slowing the capture of personal data
2. Encouraging more intentional action
3. Creating opportunities for idle time and introspection

Collectively these actions attempt to preserve our autonomy and identity.

Technology should be a tool that benefits humans and the world we live in. Yet somehow, in the chase to generate value and amass power, those creating technology have ended up exploiting its users. I don't think the answer is to become Luddites, but I do think we need to be

more careful and learn more about the technology that affects our everyday lives. As users of technology, we should reconsider our relationship with many of the Internet platforms on which we rely. And as technologists, we should re-examine our role in working with and developing these technologies. I hope Slow Net has provided you some time to think about these things.

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[1] Shaban, Hamza. "Google Parent Alphabet Reports Soaring Ad Revenue, despite YouTube Backlash." The Washington Post, WP Company, 1 Feb. 2018, www.washingtonpost.com/news/the-switch/wp/2018/02/01/google-parent-alphabet-reports-soaring-ad-revenue-despite-youtube-backlash/.

[2] Self, Jack. "Beyond the Self." The Truth of Art - Journal #71, E-Flux, 30 Nov. 2016, www.e-flux.com/architecture/superhumanity/68658/beyond-the-self/.

[3] "Slowdowns." Industrial Workers of the World, www.iww.org/about/solidarityunionism/directaction/1.

[4] Allport, Gordon W. "The Nature of Democratic Morale." Civilian Morale: Second Yearbook of the Society for the Psychological Study of Social Issues., pp. 3–18., doi:10.1037/13983-001.

ADDITIONAL READING

Data Broker List and Opt-Out Links by Griffin Boyce
https://github.com/glamrock/data-brokers/blob/master/
data-brokers.md

"How Capitalism Betrayed Privacy" by Tim Wu
https://www.nytimes.com/2019/04/10/opinion/sunday/
privacy-capitalism.html

"The Tracker Tax: How Third Party Trackers Impact
Website Speed in the United States"
http://www.websiteoptimization.com/speed/tweak/
tracker-performance/

"Is Tech Too Easy to Use?" by Kevin Roose
https://www.nytimes.com/2018/12/12/technology/
tech-friction-frictionless.html

"Why We Need a Speed Limit for the Internet" by Kris
De Decker
www.lowtechmagazine.com/2015/10/can-the-inter-
net-run-on-renewable-energy.html

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