

December 2019

# Whose AIs Are On Your Data?

**How Web Decentralization May Be The Civil Rights Battle of Our Time**

Davi Ottenheimer



# Agenda

- Quick Look Back at American History
- Dangers of Web Centralization
- Decentralization Spec for a Better Web

# Quick Look Back at American History

SHORPY

09145 SHOPPERS ON SIXTH AVENUE, NEW YORK CITY

COPYRIGHT 1903 BY DETROIT PHOTOGRAPHIC CO.

# 1960s “Intelligence”: Plate Surveillance for Safety

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**New York State identification and intelligence system, Albany, N.Y.**  
**Grant No. 040 (June 1966), \$180,000 (23 months).**

**Development of automatic license plate scanning system for conversion of license plate characters and optical data to electrical signals permitting computer search and retrieval against “wanted car” data. Contemplates production of prototype system capable of field test and evaluation.**



# Quick Look Back: Start of Welcome Public Place

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"...this controversial machine forged roads into society that revolutionized politics, fashion, and social policy as well as ***paved the way for the mechanized world*** of motion to come."

-- Victorian Cycles, Wheels of Change



# Quick Look Back: Carrying Women Backwards

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“***Auto campaigners lobbied*** police to publicly shame transgressors by whistling or shouting at them — and even ***carrying women back to the sidewalk*** ... staged safety campaigns in which actors dressed in 19th-century garb, or as clowns, were hired to cross the street illegally, signifying that the practice was outdated and foolish. **In a 1924 New York safety campaign, a clown was marched in front of a slow-moving Model T and rammed repeatedly.**”



# Quick Look Back: Terrifying Off-limits Death Trap

“...a group of private businessmen coined an offensive slur [**Jaywalking**] to promote their product and it worked so well that today it’s a legal term...the **streets went from a public place where everyone was welcome to a terrifying off-limits death trap.**”

## SF declares state of emergency for traffic deaths. Can it save pedestrians?

*The city will need more than feel-good resolutions to stop driver-related deaths*

By Brock Keeling | @BrockKeeling | Updated **Nov 8, 2019,** 1:14pm PST



# And Yet: “Jaywalking is a Fantasy Crime”

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1. Pedestrian Generally Meant Poor
2. Poor Generally Meant Non-white
3. ***Automobile Company-Controlled Infrastructure***  
Meant America Denied Civil Rights On It for a Century

“30 percent of suspicious activity reports in Los Angeles are written on blacks — even though they make up less than 10 percent of the total population”

-- Hamid Khan, Stop LAPD Spying Coalition



# “Jaywalking” Enforcement Is Very, Very Racist

By Angie Schmitt | Nov 16, 2017 | 56



Jacksonville, Florida has some of the nation's most dangerous roads for pedestrians. The city's police have cynically exploited a genuine public safety threat to use "jaywalking" as a pretext to stop and search black residents. Image: Florida Times-Union

“...we decided to **take back the public space for the residents** and to do this **we decided to get rid of cars**...while other towns in the region are shrinking, central Pontevedra gained 12,000 new inhabitants”  
-- Mayor Lores, Pontevedra, Spain

# Woman Cyclist Murdered by “Driverless” Car

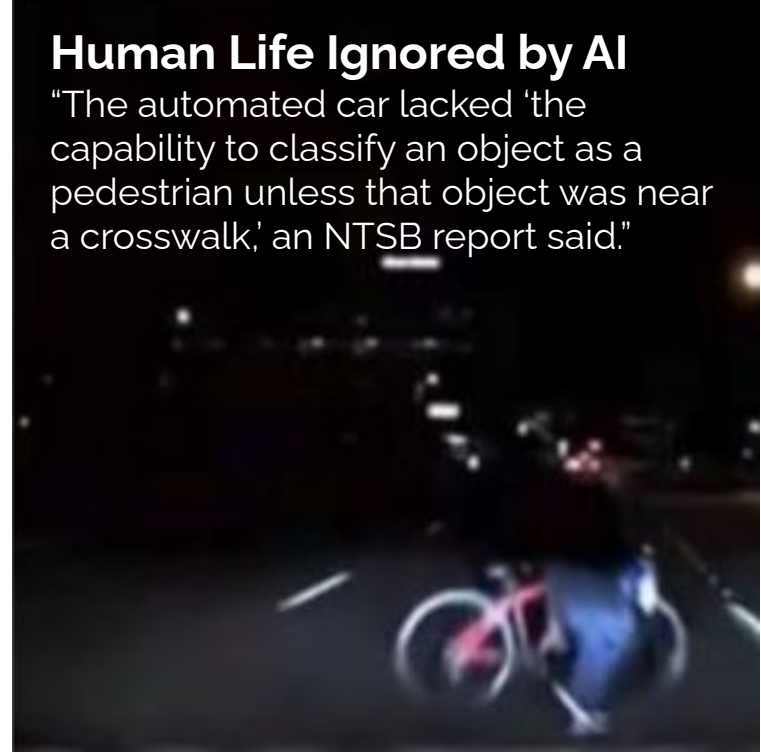
davi ((( ))) 德海 @daviottenheimer · 14 Dec 2016  
any comment @sfpd @sfmta @walksf on driverless [redacted] running red lights, ignoring pedestrians in crosswalk? [twitter.com/JoeBeOne/statu...](https://twitter.com/JoeBeOne/status...)



1 2 6

## Human Life Ignored by AI

“The automated car lacked ‘the capability to classify an object as a pedestrian unless that object was near a crosswalk,’ an NTSB report said.”



# Tweets:

July 2016

“Run them over you won't be convicted”

**King Kaiser** @734\_365  
#I94ShutDown I bet if a couple of cars would plow through these assholes, they would stop playing in the road.  
7/10/16, 8:02 AM  
1 RETWEET 2 LIKES

**Miss Anon bitch** @MBeyda0605  
#I94shutdown in St. you know the black trash blocking the road are really speed bumps, just run them over problem solved.  
7/10/16, 6:58 AM

**Bullet Bob** @BulletBob28  
#I94ShutDown Definitely would of mowed them down GTA style

**Caleb** @INCpreneur  
I've always wanted to run into (through) one of these blockades. In the scenario of men v moving truck, I'll take the truck.  
#I94ShutDown  
7/10/16, 6:34 AM

**PROFESSIONAL INFIDEL** @muster\_buster  
#i94shutdown RUN THEM THE FUCK OVER THEY ARE HOLDING YOU HOSTAGE/ KIDNAPPING ,,SHOOT THEM IF YOU HAVE GUN  
7/10/16, 12:44 AM  
1 RETWEET 2 LIKES

**Jim Ro** @AmznTrotledMe  
Good thing my car has never been stopped by this bullshit cause I'd drive right over them & celebrate. #I94ShutDown

**Bruh Comedy** @BruhComedian  
#I94shutdown If I was on my way home and I see y'all standing there, I ain't even gonna touch the brakes. It's full steam ahead Bruh.  
7/10/16, 2:08 AM

**Honky Tonk Jew** @HonkyTonkJew  
anyone stuck on I94 because of #I94ShutDown and reading Twitter? Run them over....  
7/9/16, 11:39 PM  
6 LIKES

**Will George** @ColoradoWG  
Blocking the road & disrupting other's plans is a horrible way to gain sympathy. Run them over. U won't be convicted.  
#I94ShutDown  
7/9/16, 11:44 PM  
1 RETWEET 3 LIKES

# Infrastructure Never Should Have Been This

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**Jan 2017**



**U.S. oilman campaign to shift road safety burden to victims:**

“A bill introduced by an oil patch lawmaker would provide an exemption for the driver of a motor vehicle if they unintentionally injured or killed a pedestrian obstructing traffic on a public road or highway.”

**Aug 2017**

**U.S. terror act was car (app) used as (network) weapon:**

“One person was killed and 19 hurt when speeding car slammed into throng of counter protesters in Charlottesville, where rally of white nationalist and other right-wing groups had been scheduled to take place...”





THIS IS FOR EVERYONE



**"The web as I envisaged it,  
we have not seen it yet."**



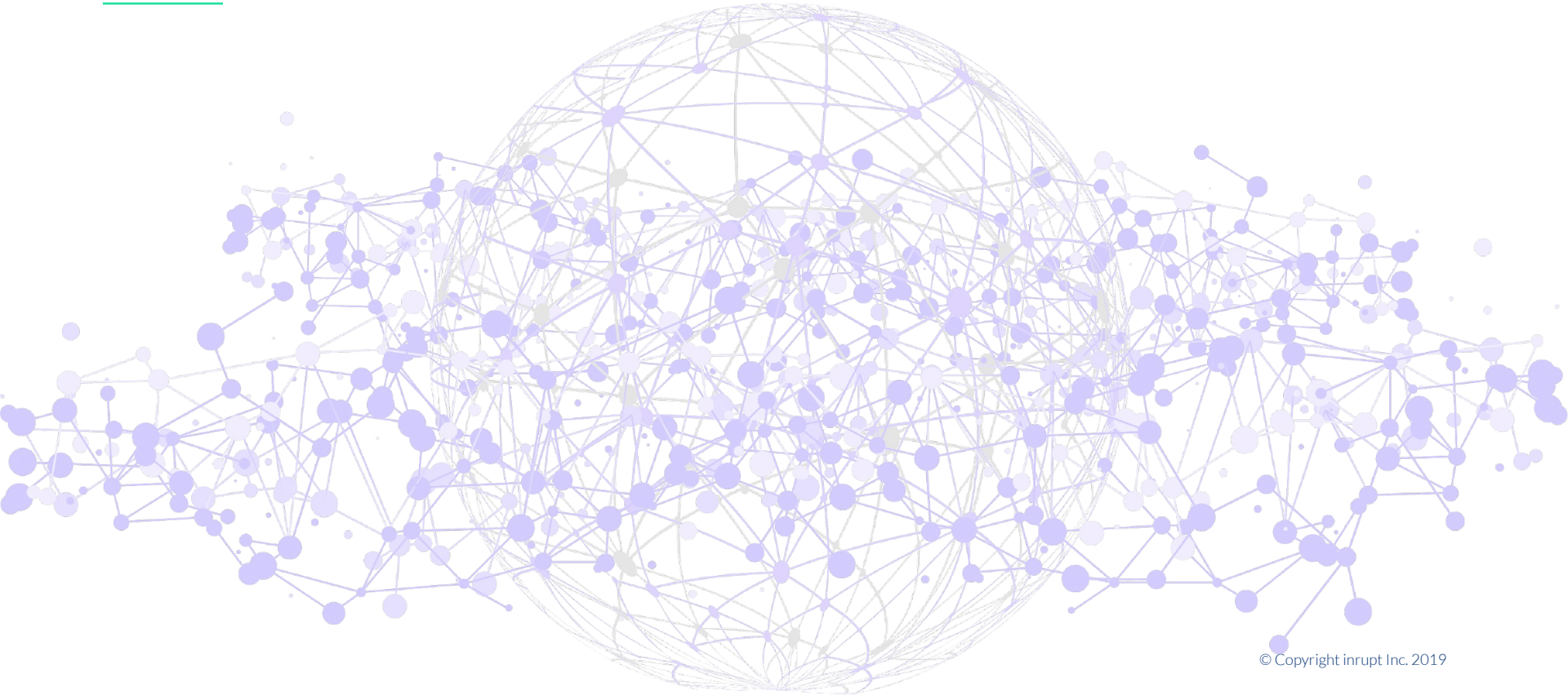




# Do You Worry About Web Centralization?

# The Internet Was Meant to Remove Walls

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# Web Initially Delivered Decentralized Comms

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Evolutionary *Internet*worked Social Groups



# Access to Data (Infrastructure Control) = Power

“Unfortunately I believe ***the class divide in the future will be data***,” says Dr. Naveen Rao at the #TIME100Health Summit. “And if you're not careful, ***those who have access to data will have better health*** than those who don't have access to data”

“Those Who Have  
***Access to Data***  
Will Have Better...”



# ***KNOWLEDGE***

(inverse of privacy)

Access to Data  
Allegedly Brings  
Benefits for ML/AI

## Output



*Civil  
Rights?*

## Margin

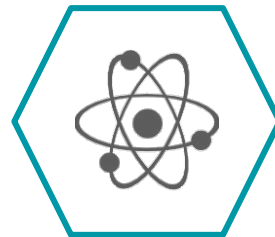


*Human  
Rights?*

## Safety

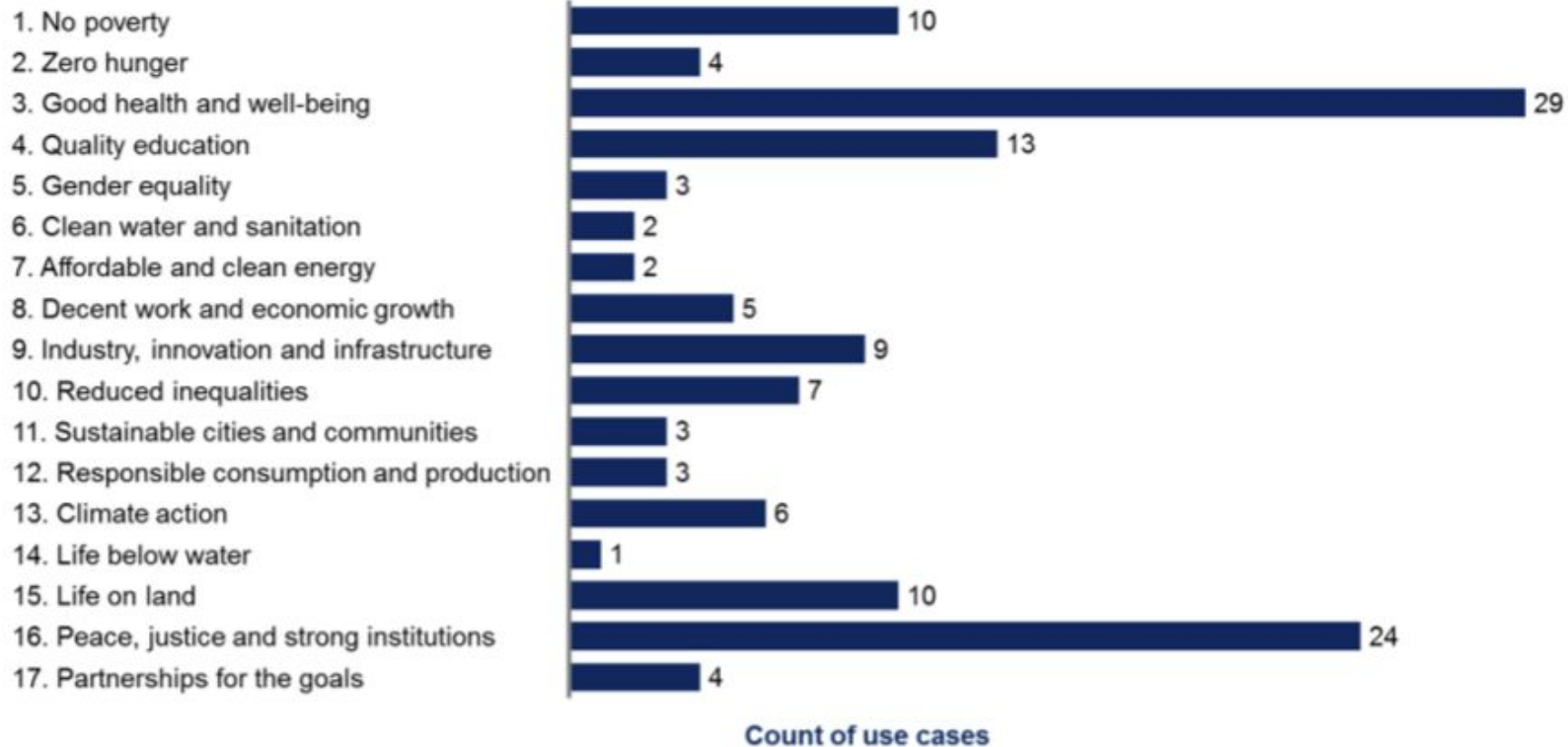


## Innovation



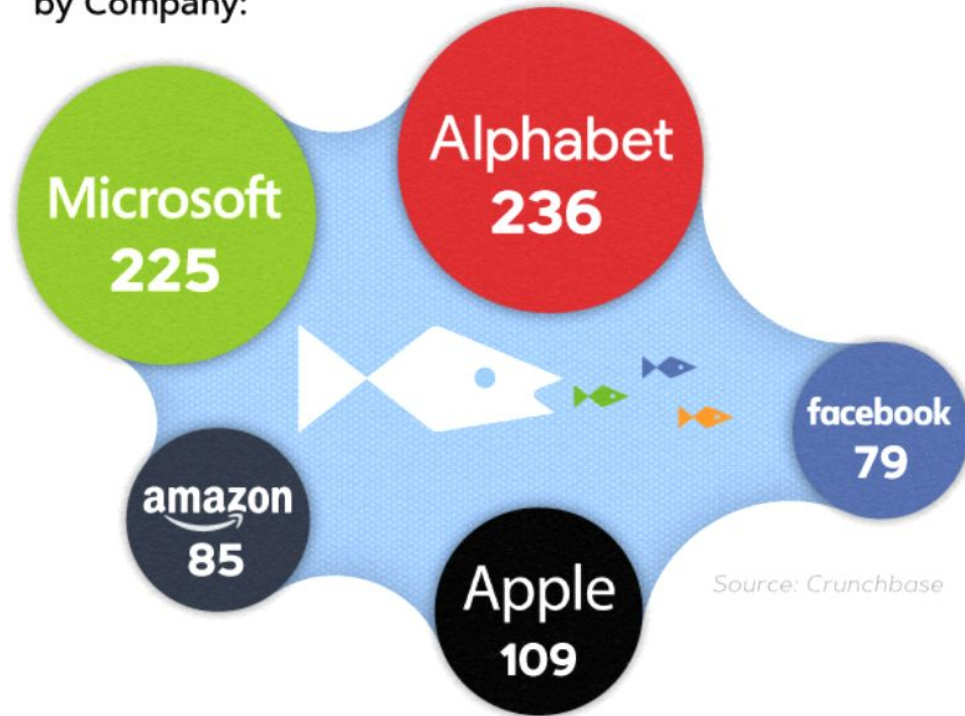


# AI Use is Expected to Improve Sustainability



# Except...There's Been a Centralization Effect

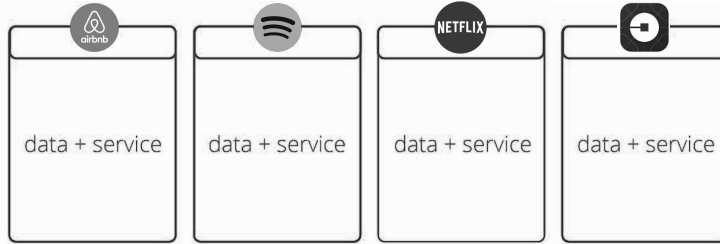
**Number of Acquisitions**  
by Company:



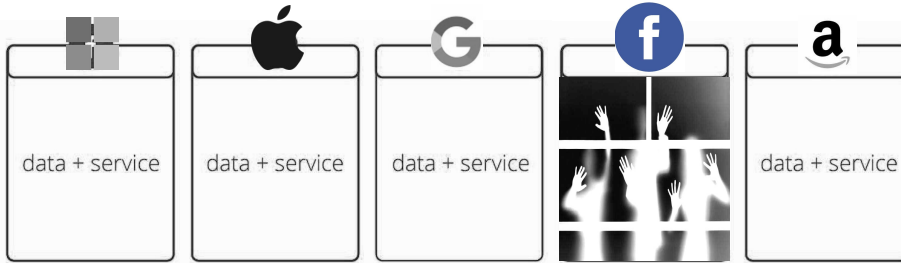
Source: Crunchbase

# Centralized Services = *Captive Human Data*

Transaction Cells (Airbnb, Spotify, Netflix, Uber)



Infrastructure Cells (Microsoft, Apple, Google, Facebook, Amazon)



# Captive Human Data = Low Product Freedom

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“March study from Voicebot showed even those who said they were ‘very concerned’ about privacy risks posed by smart speakers were only 16 percent less likely to own one than the general public.”

***“People who say they’re concerned with security will [face no choice but to] do a lot of very insecure things...”***

Speaker with hidden camera

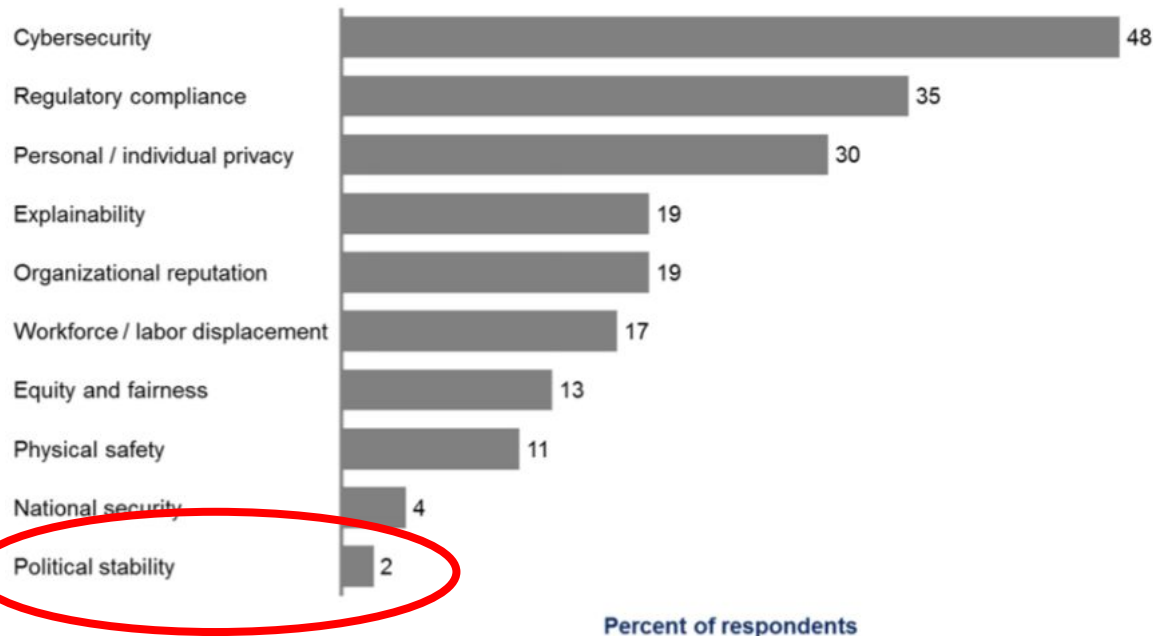


# Captive Human Data = Low Political Freedom

“Despite growing recognition of the importance of addressing ethical concerns associated with usage of AI...**13 percent are mitigating risks to equity and fairness**, such as algorithmic bias and discrimination”

## Organizations taking steps to mitigate risks from AI (2019)

Source: McKinsey & Company

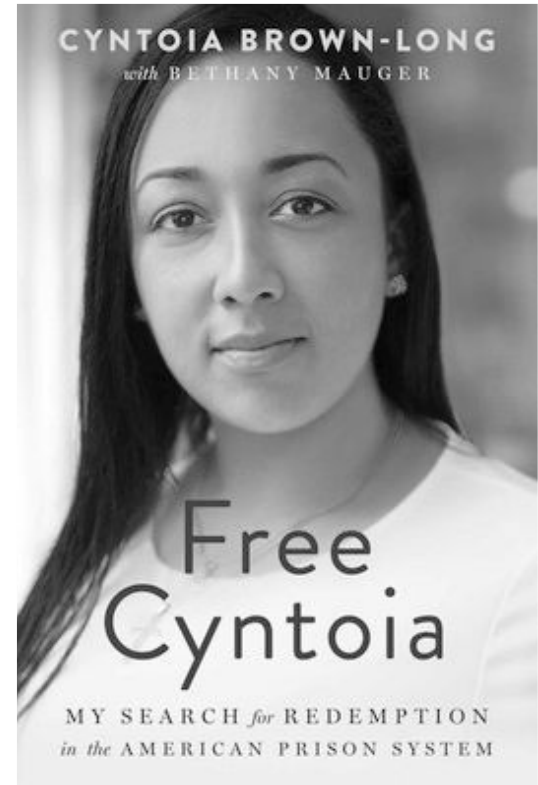


# Captive Human Data = Forced Promiscuity

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"If you can't identify victims... for so long I thought I consented, I was being promiscuous, because that's what I was being told by society.

I didn't know anything about the Federal statute that anyone who is a minor is a trafficking victim, ***[for them] there's no such thing as consent.***"



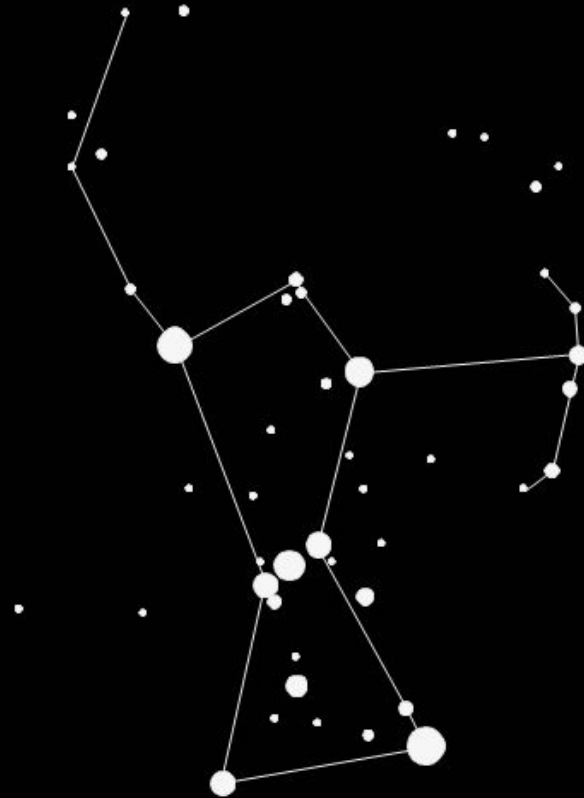


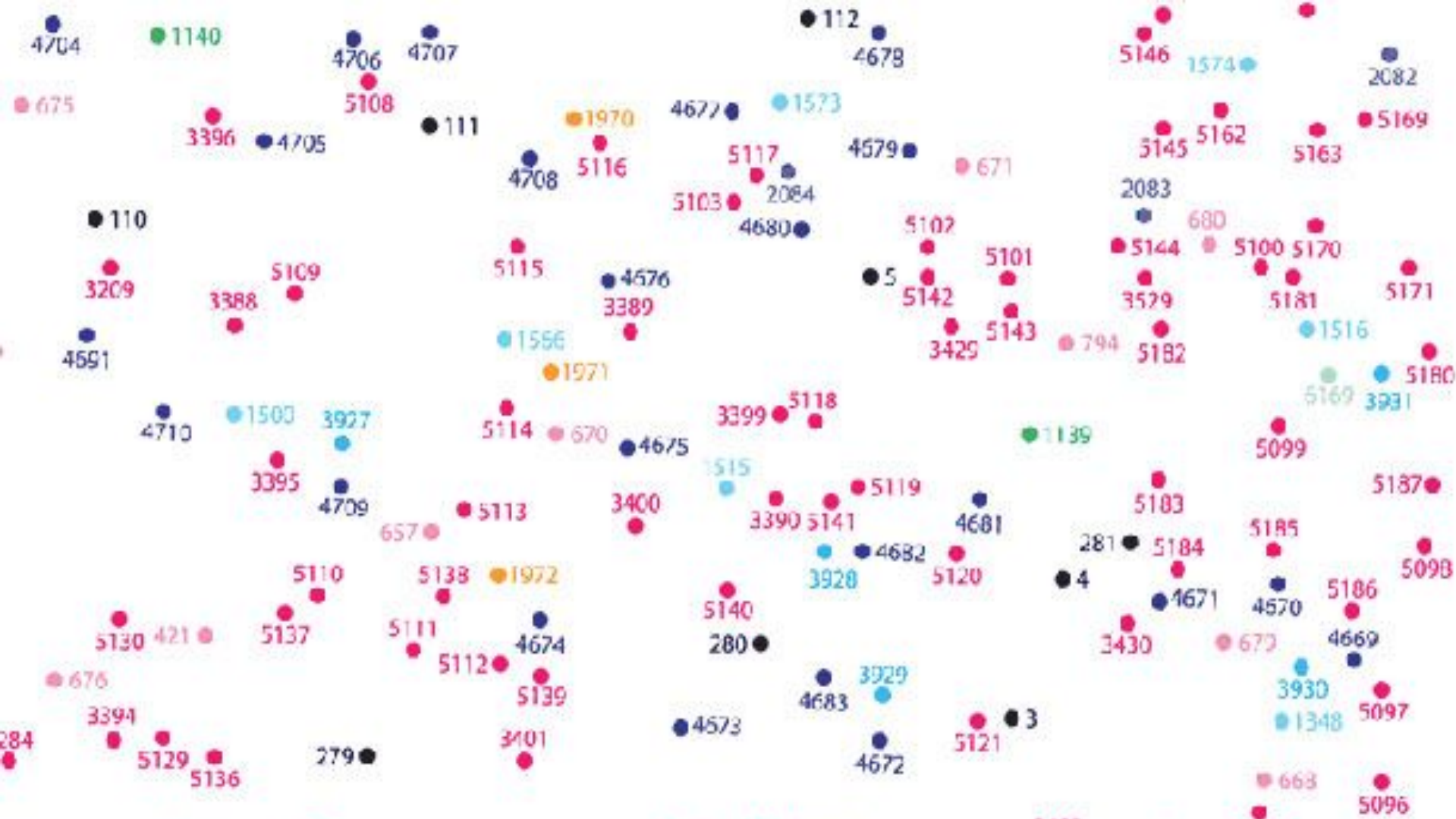
# Your Body (of Data) Becomes “Their” Product

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Any ‘data exhaust’ really is  
a constellation of  
***OUR DIGITAL SELVES***

Data is ***NOT A BYPRODUCT***  
of modern technology  
companies





# Your Data is Their Product

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<https://www.yellowtrace.com.au/mona-lisa-reinterpreted/>



# Your Data is Their Product

*"Few-Shot Adversarial Learning of Realistic Neural Talking Head Models" using three different source videos to animate a still image*





# Your Data is Their Product, Against Your Will

## Poll: Americans feel powerless over surveillance

Most people feel they have little control over the data collected about them by companies and the government.

Percentage of U.S. adults who say ..

	Companies	Government
They have very little/no control over the data collected	81%	84%
Potential risks of collecting data about them outweighs the benefits	81%	66%
They are very/somewhat concerned about how the data collected is used	79%	64%
They have very little/no understanding about what is done with the data collected	59%	78%

Source: Pew Research Center Poll

AP

The majority of Americans feel they have little control over the data collected about them by companies and the government.;

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# Your Data is Their Product, Against Your Will

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## Mary Wollstonecraft (1759-1797)

### *Vindication of the Rights of (Wo)Man*

- All People Born Equal
- People Have the Right to Remove Bad King
- Mistreatment of Vulnerability is Immoral
- ***Slavery Immoral***

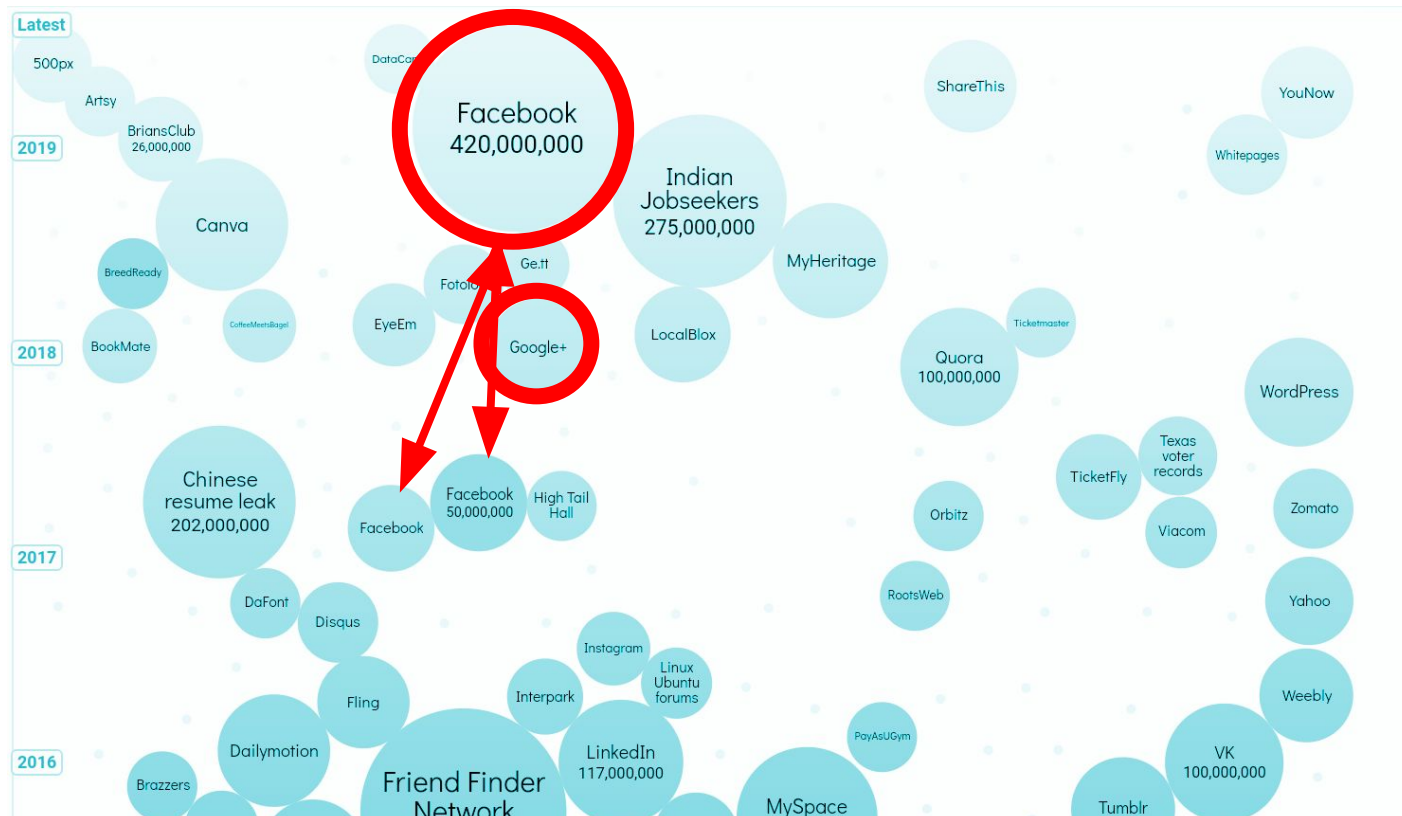


“Educate women like men,’ says Rousseau, ‘and the more they resemble our sex the less power will they have over us.’  
This is the very point I aim at. **I do not wish them to have power over men; but over themselves.**” (1792)



# Centralization Also Untrustworthy & Breached

<https://www.informationisbeautiful.net/visualizations/worlds-biggest-data-breaches-hacks/>



# Have You Seen Insider-threat as a Service (IaaS)?

“A **Facebook employee was paid thousands of dollars in bribes** by a shady affiliate marketer to reactivate ad accounts that had been banned due to policy violations, a BuzzFeed News investigation has found. A company spokesperson confirmed that an unnamed employee was **fired after inquiries from BuzzFeed News sparked an internal investigation.**”





# Do You Worry About Human Captivity?

# Market Pressures for Decentralization

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## Localization = availability (performance):

"The past decade has seen an acceleration in data centres being built across Australia, creating a de-centralised source of information..."

## Localization = confidentiality (independence):

"...balkanization can be a positive or negative process. For some, the term represents a move toward freedom from oppression..."





# Some Do Take a Stand

“...inability to be trustworthy guardians of private information. ...beyond the *irresponsible guardianship of private data is the issue* of active enabling of disinformation.

I will not work for a company that takes that stance.”

<https://www.abstractioneer.org/2019/10/why-im-leaving-facebook.html>

## Make Impact at facebook

John Panzer [redacted]@gmail.com>  
To: Robert [redacted]@fb.com>

Mon, Oct 21, 2019 at 3:01 PM

Hi Rob,

I'd like to take a moment to respond and explain why I'm not currently interested in an engineering position with Facebook, nor likely to ever be. My hope is that you will convey this information to the hiring Engineering Managers you mentioned in your prior email of Aug 13.

Over the past few years, I've grown increasingly concerned about Facebook's inability to be trustworthy guardians of private information. The recent slap on the wrist from the FTC for Facebook violating the terms of its prior consent agreement made it clear that there wasn't going to be any real penalty for Facebook for violating court orders regarding private information, which is unsettling. But beyond the irresponsible guardianship of private data is the issue of active enabling of disinformation.

Mark Zuckerberg claimed he had made a mistake in 2016 by ridiculing the idea of election interference on his platform, apologized, and claimed he was turning over a new leaf:

"After the election, I made a comment that I thought the idea misinformation on Facebook changed the outcome of the election was a crazy idea. Calling that crazy was dismissive and I regret it. This is too important an issue to be dismissive."

As it turns out, that as just words, and he's back to being dismissive. Last month, after Mark Zuckerberg had a private meeting with Donald Trump, I discovered that he has decided to not just passively enable, but actively aid and abet, the spread of disinformation on his platform.

This month, it turns out that that this is actually happening, and Facebook is perfectly OK with it. [<https://twitter.com/nytimes/status/1181811559598825472?s=20>] In addition, Mark Zuckerberg has given speeches effectively disclaiming all responsibility as an advertising platform to prevent false advertising to voters, even as he rakes in money from political campaigns (and, almost certainly, foreign countries) spreading political disinformation on his network.

This is irresponsible and dangerous to our democracy. I will not work for a company that takes that stance. Thus, there would be no point in us having a discussion about long-term possibilities.

(Unless, in the light of all of this, you are interested in new opportunities yourself, in which case, certainly please let me know.)

Regards,  
John

See also my blog post on this subject: <https://www.abstractioneer.org/2019/10/why-im-leaving-facebook.html>

On Mon, Oct 21, 2019 at 12:42 PM [redacted] wrote:

Hi John,

How are things at Google? Facebook has many projects slated for 2019/2020 and we are looking for people such as yourself who can drive some of these initiatives forward. Are you free to talk this week or next for 15-20 minutes? Even if this isn't the right time, I'd love to start a long-term conversation.

In the meantime, feel free to explore some of our latest technologies and initiatives here, <https://code.fb.com/> and learn about how we're addressing challenges in 2019, <http://bit.ly/gpschallenges>

Best,

# History Warns of Trickery to Perpetuate Captivity

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Nine days after the inaugural, after prolonged debate, the Confederate Congress authorized the enlistment of black soldiers in the southern armies. A few days later, Lincoln took note of this act of desperation in remarks to an Indiana regiment in Washington. “I have always thought that all men should be free,” he remarked, but if any deserved to be slaves it was those willing to fight to keep themselves or others in bondage.<sup>12</sup>

# Trickery 2011: Consent Modified *After* Study Ends

## Data Use Policy

Date of Last Revision: ~~September 23, 2011~~, 2011

### I. Information we receive and how it is used

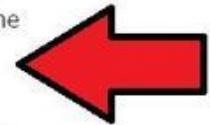


Privacy policy changes proposed in May 2012

#### How we use the information we receive

We use the information we receive about you in connection with the services and features we provide to you and other users like your friends, our partners, the advertisers that purchase ads on the site, and the developers that build the games, applications, and websites you use. For example, we may use the information we receive about you:

- as part of our efforts to keep Facebook products, services and integrations safe and secure;
- to protect Facebook's or others' rights or property;
- to provide you with location features and services, like telling you and your friends when something is going on nearby;
- to measure or understand the effectiveness of ads you and others see, including to deliver relevant ads to you;
- to make suggestions to you and other users on Facebook, such as: suggesting that your friend use our contact importer because you found friends using it, suggesting that another user add you as a friend because the user imported the same email address as you did, or suggesting that your friend tag you in a picture they have uploaded with you in it; and
- for internal operations, including troubleshooting, data analysis, testing, research and service improvement.



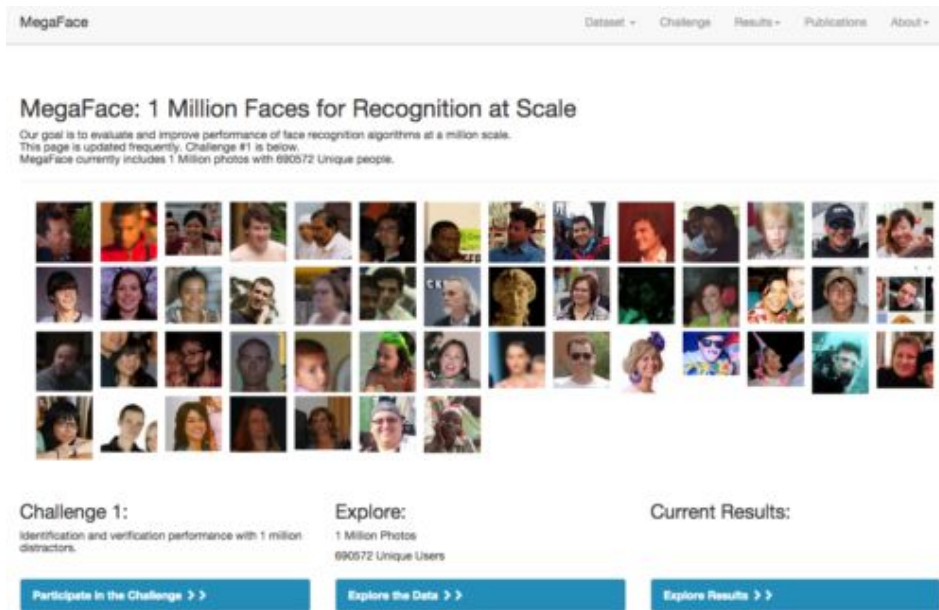
While you are allowing us to use the information we receive about you, you always own all of your information. Your trust is important to us, which is why we don't share information we receive about you with others unless we have:



# Trickery 2012-2018: Leaky Backdoors for “Study”

“In June 2014, seeking to advance the cause of computer vision, Yahoo unveiled ... **researchers who accessed database simply downloaded** versions of the images and then redistributed them.”

“[Facebook]...suit alleges that Illinois **citizens didn't consent** to having their uploaded photos scanned with facial recognition and weren't informed of how long the data would be saved...”



The screenshot shows the MegaFace website interface. At the top, there is a navigation bar with links for Dataset, Challenge, Results, Publications, and About. The main heading is "MegaFace: 1 Million Faces for Recognition at Scale". Below this, a paragraph states: "Our goal is to evaluate and improve performance of face recognition algorithms at a million scale. This page is updated frequently. Challenge #1 is below. MegaFace currently includes 1 Million photos with 690572 Unique people." A large grid of diverse human faces is displayed in the center. At the bottom, there are three columns of information: "Challenge 1: Identification and verification performance with 1 million distractors." with a "Participate in the Challenge >>" button; "Explore: 1 Million Photos 690572 Unique Users" with an "Explore the Data >>" button; and "Current Results:" with an "Explore Results >>" button.

# Trickery 2019: Declarations, Apologies...Lies

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“...Huawei Technologies Co Ltd, computer maker Lenovo Group, and smartphone makers OPPO and TCL Corp were among about **60 companies worldwide that received access to some user data** after they signed contracts to re-create Facebook-like experiences for their users.”

“Facebook allowed Apple and other device makers to have **“deep” access to users’ personal data without their consent,** according to the Times.

The Times said Facebook allowed companies access to the data of users’ friends without their explicit consent, **even after it had declared it would no longer share the information with outsiders.”**

# Data Privacy Bills Evolving

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## Mind Your Own Business (MYOB) Act

- **Executives to be held personally responsible when they lie**
- Consumers control their own private information
- Companies provide transparency about how they use and share data
- State by state creation of “protection and advocacy” organization to file additional civil suits against companies that violate privacy regulations



# Data Privacy Bills Evolving

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## General Data Protection Regulation (GDPR)

- Only collect data required for efforts people agree with
- Explain why collect the data
- Disclose third parties able to access data
- Alert EU residents of breach within 72h
- Correct, delete and/or provide lists of user data at their request



## California Consumer Privacy Act (CCPA)

- Residents can demand companies disclose what personal data was collected
- Consumers can ask companies to delete their personal data
- Individuals can forbid companies to share personal data with third parties

# Data Portability Bills Emerging

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## Augmenting Compatibility and Competition by Enabling Service Switching (ACCESS) Act

"communications platforms with over 100 million U.S. monthly active users to make their services interoperable"

"require platforms to give users the option to designate a trusted third-party service to manage their privacy, content, online interactions and account settings"



## Designing Accounting Safeguards to Help Broaden Oversight and Regulations on Data (DASHBOARD) Act

"disclose how user data monetized and how much that data is worth"





# Regulation Inspires Innovation

Technology Can Deliver Access  
While Respecting Human Rights

# Realities of Big Data Means Big Decisions Ahead

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A young child with curly hair, wearing a black superhero mask and a black cape, is shown in profile. The child is holding a white hexagonal shape in their right hand, extending it towards the left. The background is a solid teal color with a pattern of white hexagons of various sizes scattered across it, particularly concentrated on the right side.

Vision, Mission and Impact

# Introduction to Solid



# Vision

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A future where

**PEOPLE CONTROL THEIR DATA**

and remain free to choose  
software and services



# Mission

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## PROMOTE FREEDOMS

- Identity determination
- Data ownership and control
- Application development







Impact

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**DRIVE WEB GROWTH ETHICALLY** by restoring control to data owners, away from infrastructure operators



# Inrupt Inc

## Solid Principles

- Give data owners better access control by decoupling apps
- Provide universal way to identify people, organisations and things
- Build upon standards that made the World Wide Web so successful

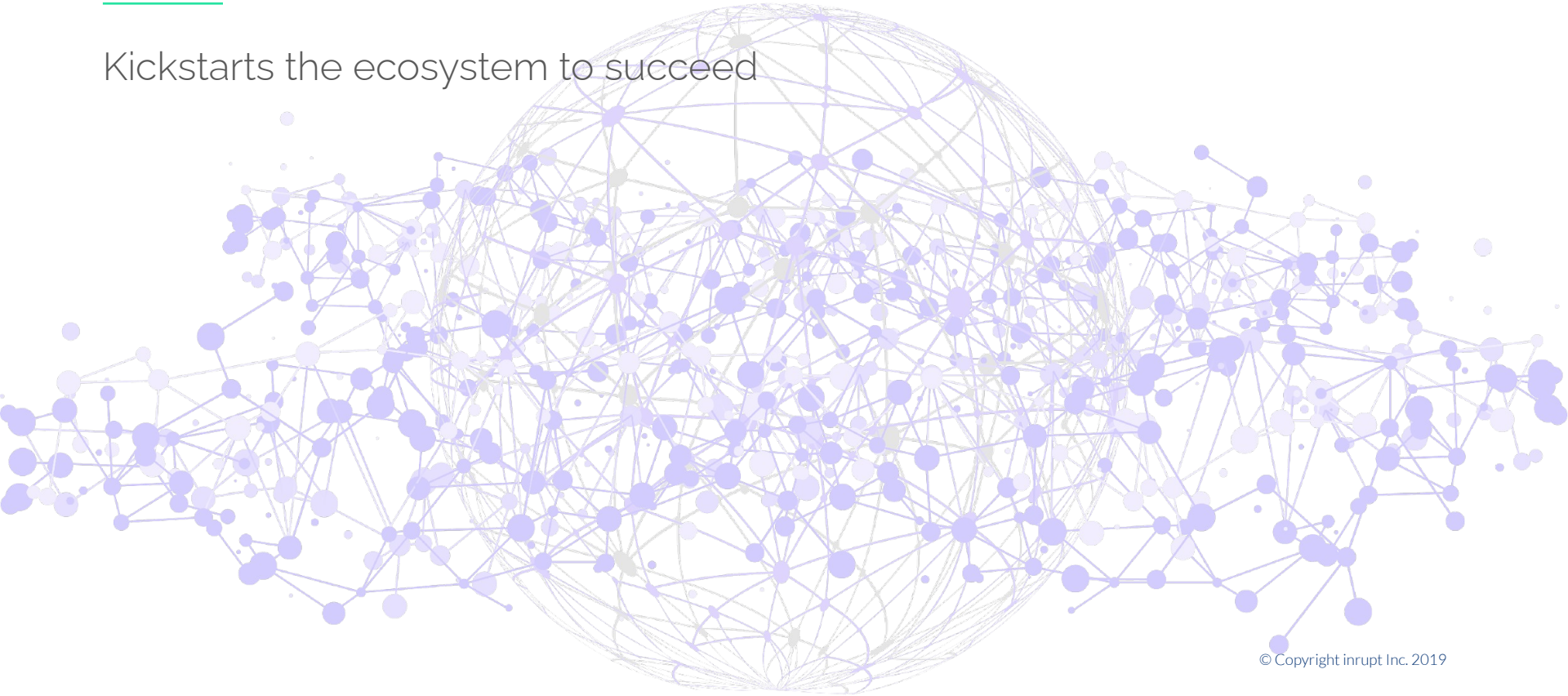
## Solid Ecosystem Commercialisation

- Founded October 2018
- Sir Tim Berners Lee and John Bruce

# What does inrupt do?

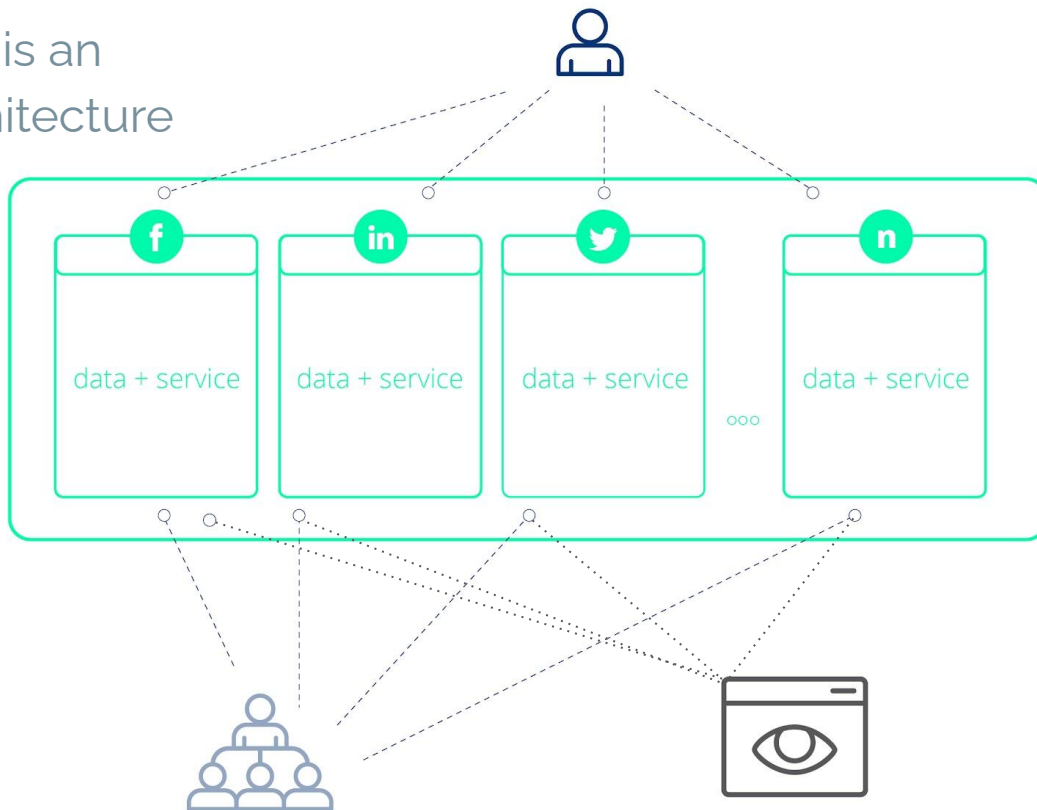
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Kickstarts the ecosystem to succeed



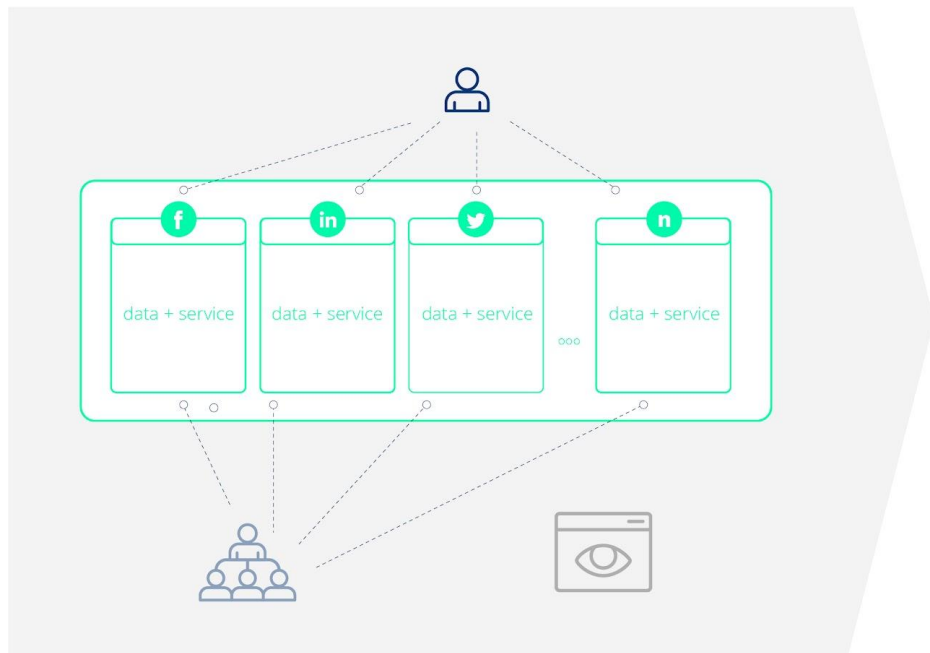
# Serving Market Demand for Decentralized Web

Captive Data is an  
Immoral Architecture

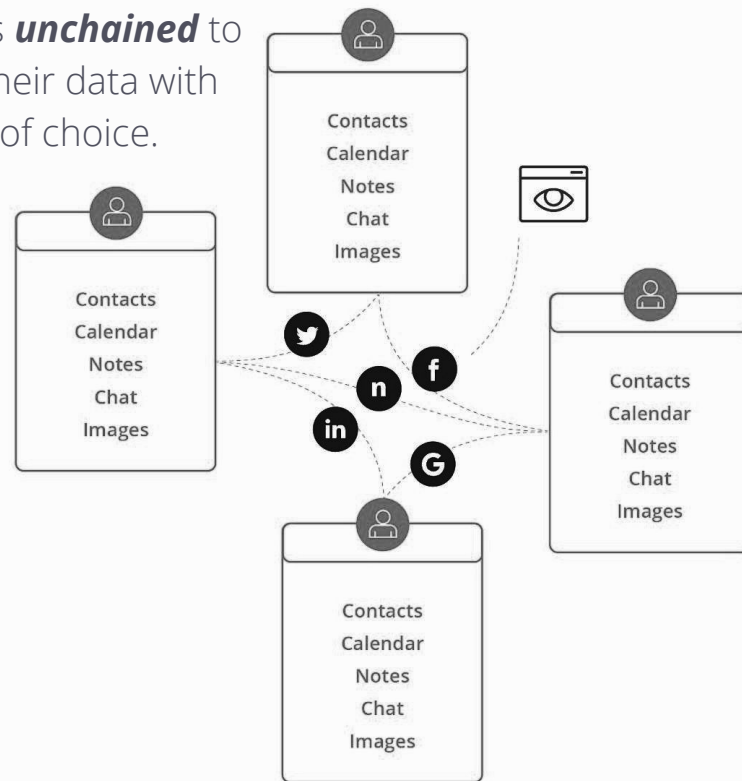


# Decentralized Web = Self-Determination

Reduce User Data Lock-in



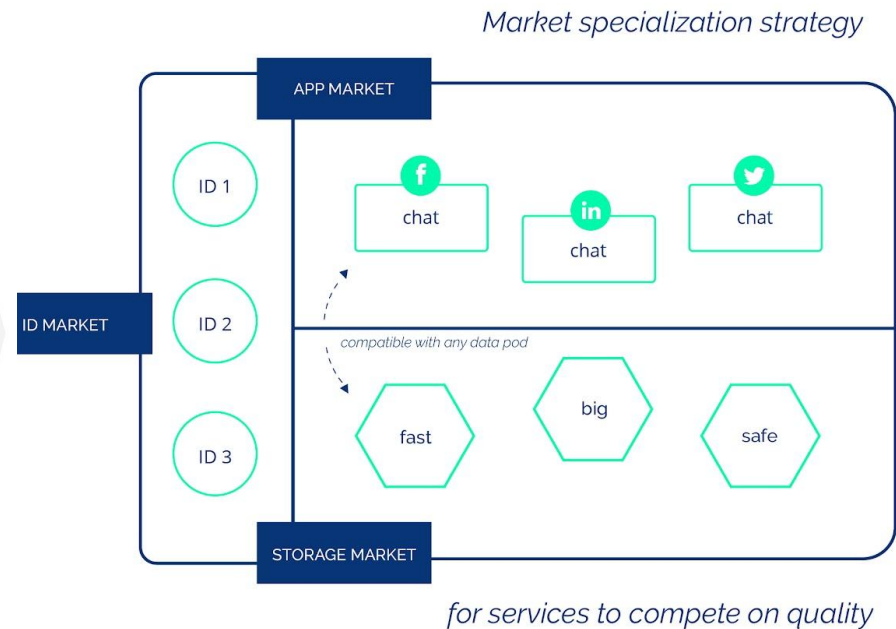
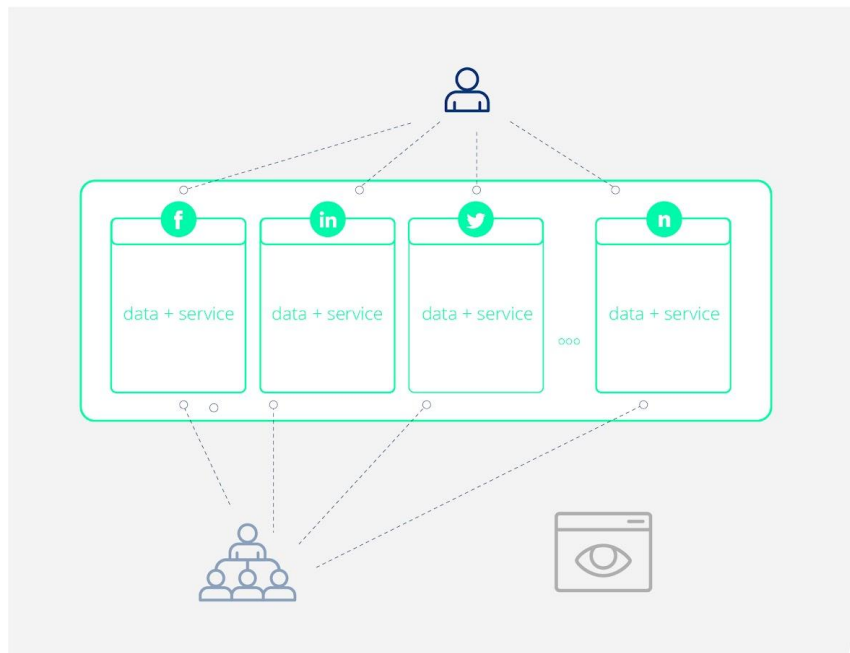
Users **unchained** to use their data with apps of choice.





# Decentralized Web = Innovation Opportunities

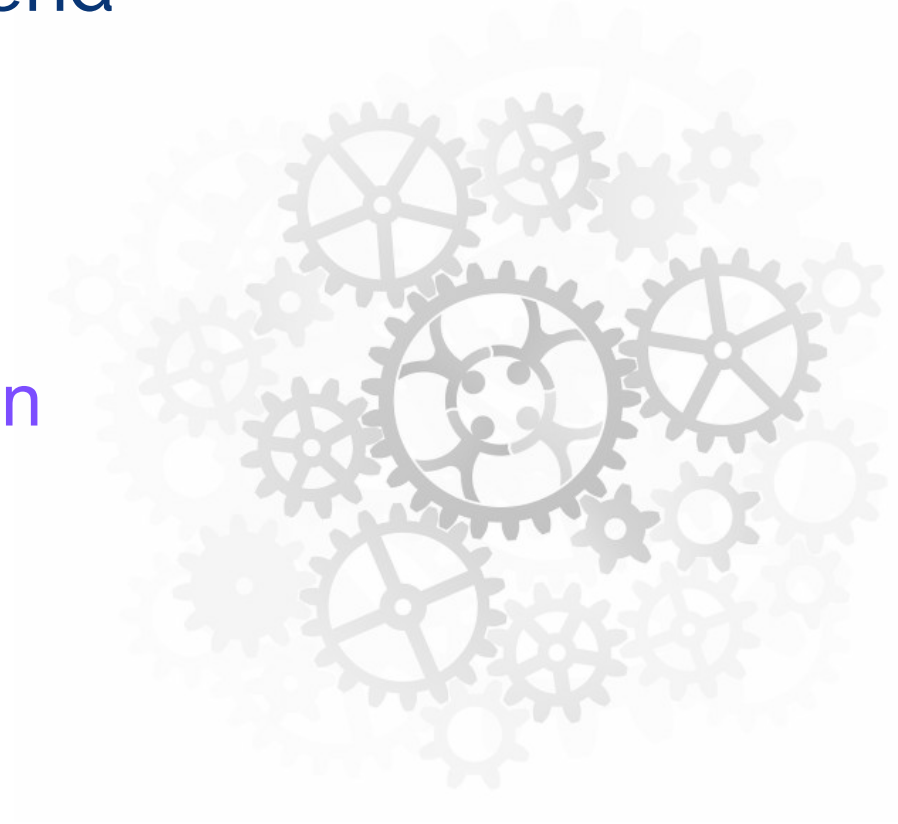
Reduce Barriers to Competition



# Solid Specification to Extend

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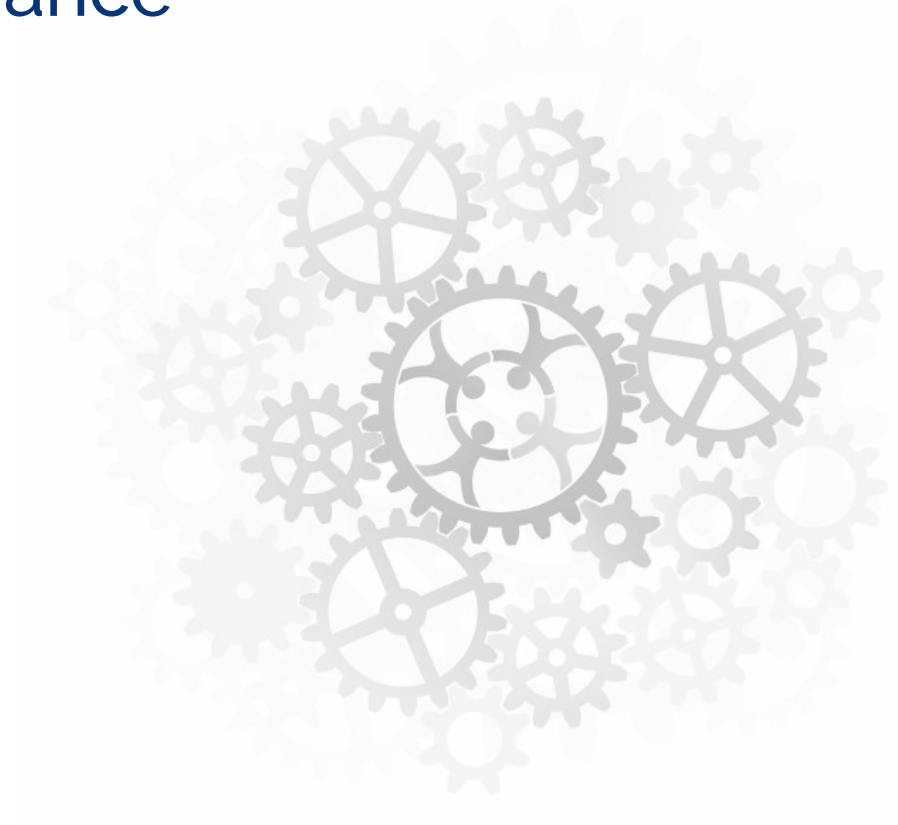
Modular specifications  
extend the true foundation  
of the ***World Wide Web***



# Solid Specification to Enhance

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Make the web (again)  
an enhanced  
***Collaborative  
Read-Write Space***



# Solid Applications

- follow standards/specifications
- communicate directly with users
- interact with other apps accessing data
- won't authenticate users
- won't control user data
- won't need to store user data



# #1 Apps Delegate Authentication to ID Providers

## Solid Server

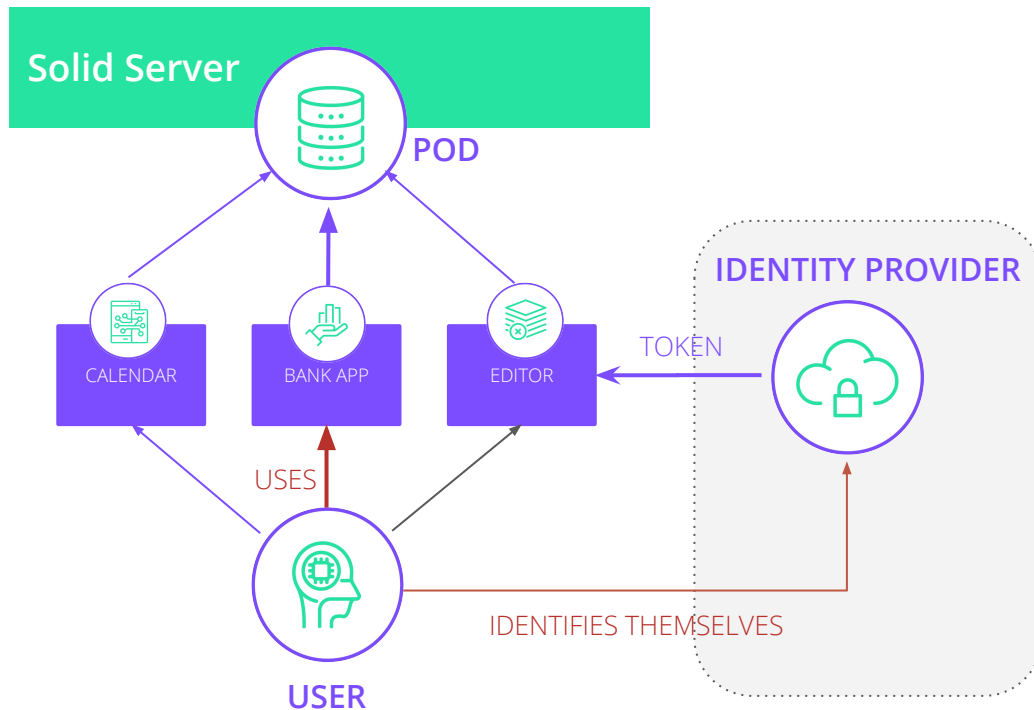
- Hosts Pods
- Applies Web Access Control ([WAC](#))
- Enforces App & User access rights

## User

- Authenticates with IdP
- Uses Browsers and Apps

## Identity Provider

- Identifies Users
- Provides Access Tokens to Apps  
(OAUTH 2.0 / OIDC / OTHER)





# #2 Apps Request Access to User-Controlled Data

## Solid Server

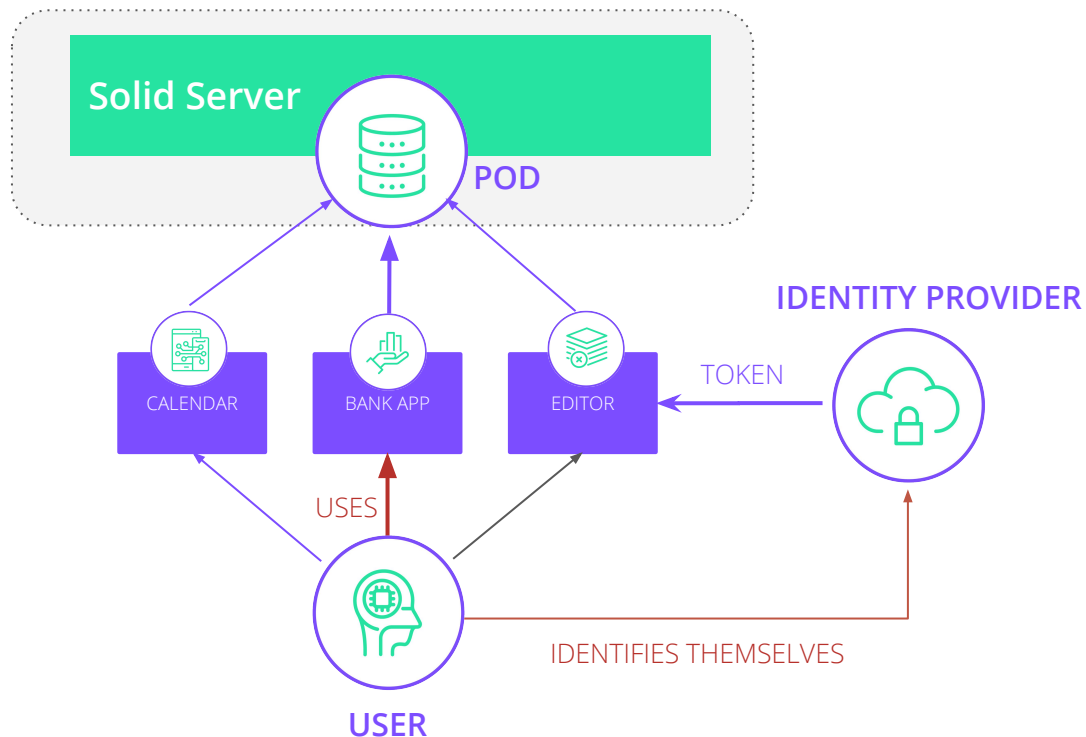
- Advertises Pod as network address
- Enforces Access Controls

## Pod

- Gives Users storage for their data

## User

- Chooses where to host Pod
- Directs Apps to store data in Pod
- Organizes data in their Pod
- Controls how their data is used



# #3 Apps Read/Write/Modify User Data in Pod

## User

- Retains control of User data
- Directs all Apps to use a Pod

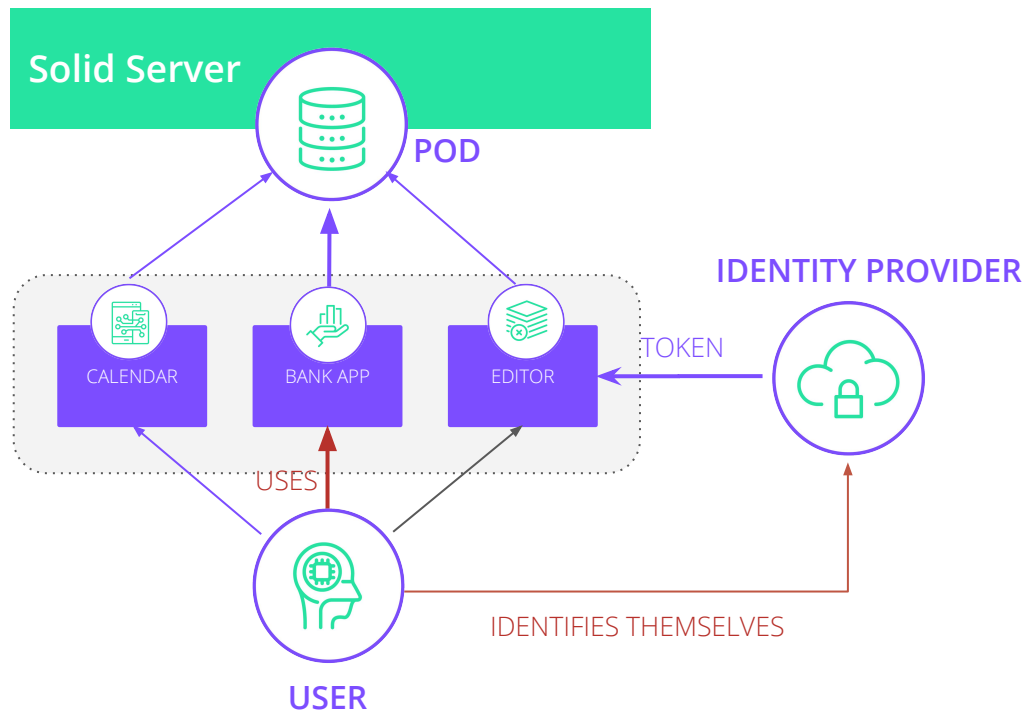
## Apps

*No responsibility for user data*

*No hosting infrastructure*

*No credential management*

- Decoupled from storage
- Respects User Pod Access Controls



# #4 App Communicate in Network of Pods

## Solid Servers

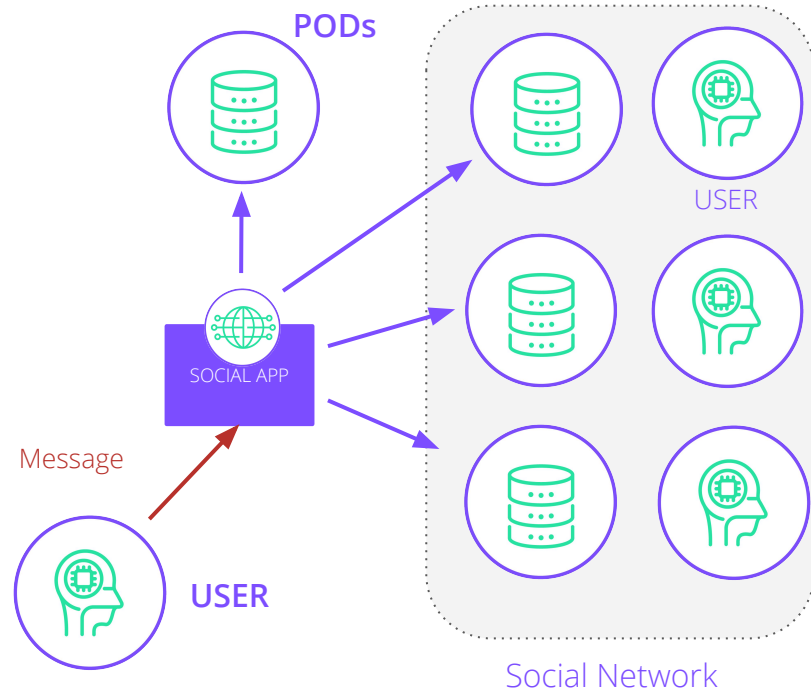
- Provides notifications
- Follows specification

## Pod

- Provides general inbox
- Sets group permissions
- Stores user posts

## Apps

- Writes posts to user Pods
- Reads posts from group Pods



# #5 Diverse Apps Work With Standardized Data

## Solid Server

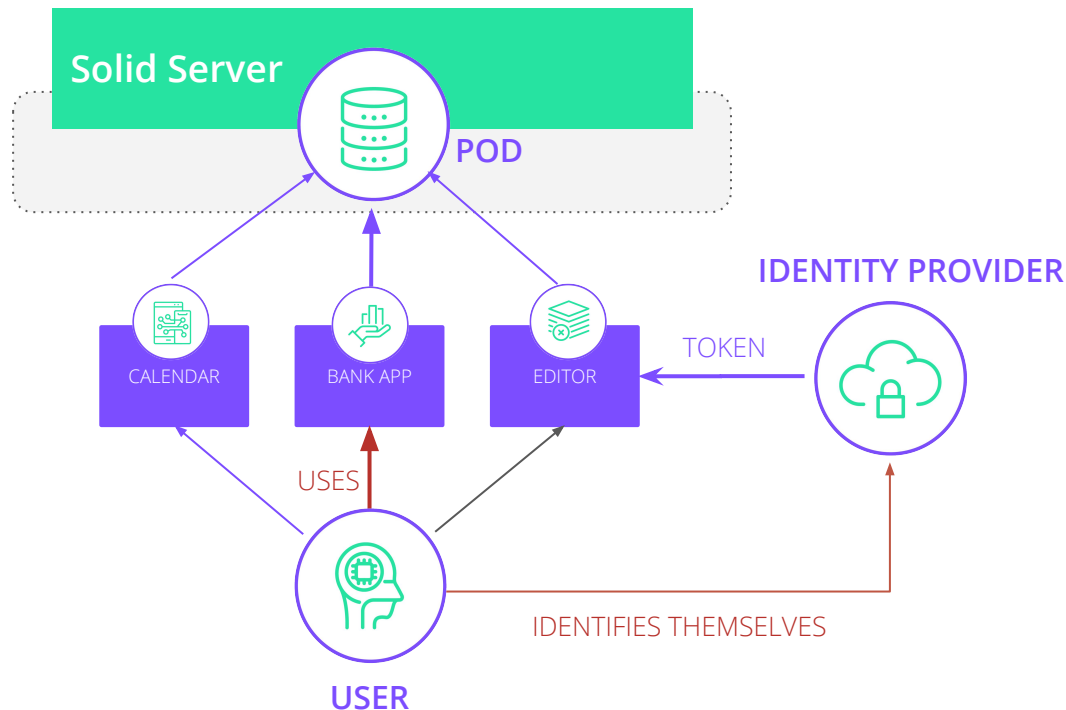
- Enables distributed querying
- Privacy respecting caches
- Cryptographic security (Encryption)

## Apps

- Use public schema standards
- Data in machine readable format
- Reusable across Apps

## Pod

- Store structured data
- RDF/RDFS/JSON-LD/Public vocab
- Data shape expressions for validation



# Extending Standards for an Interconnected Web

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## Solid specification

Solid leverages many standards.. See <https://solid.github.io/> .

## Identity

WebID URIs used as universal usernames or actor identifiers. See <http://www.w3.org/2005/Incubator/webid/spec/identity/> .

## Reading and writing data

The Linked Data Platform specification provides a REST API for CRUD operations on resources and containers. See <https://github.com/solid/solid-spec/blob/master/api-rest.md> .

## PubSub

Real time updates for resources. See WebSocket API <https://github.com/solid/solid-spec/blob/master/api-websockets.md> .

## Authentication

Cross-domain, de-centralized authentication, identity provider/certificate authority independent. Combines standards into a WebId-OIDC specification. See <https://github.com/solid/webid-oidc-spec> .

## Authorisation and Access Control

Decentralized system for controlling access to resources for individuals and groups identified by HTTP URIs. See <https://github.com/solid/web-access-control-spec> .

## Content Representation

Reading and writing structured data, Linked Data, and binary resources. See <https://github.com/solid/solid-spec/blob/master/content-representation.md> .



# Opportunities Enabled by inrupt

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## Improve data quality

Customers will be sharing their data across many services so they will maintain it more regularly than the data you have.

## Reduce liability gaps

Putting customers in control of their data reduces cost and liability.

## Reduce data captivity

You can avoid having to use the big tech platforms that currently dominate the routes to the customer.

## Rapid app development

Apps are quicker to develop because the data tier is predictable, extensible and can reuse existing schemes.

## Increased interoperability

Moving to a common standard for machine readable data makes interoperability between Applications much more likely.

## New markets

There are opportunities ranging from assured Pod hosting, through Identity proofing to network affinity.



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a new universe of opportunity with Solid

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