

# The Problem with Privacy is Security



SECTOR OCTOBER 2010

# Outline



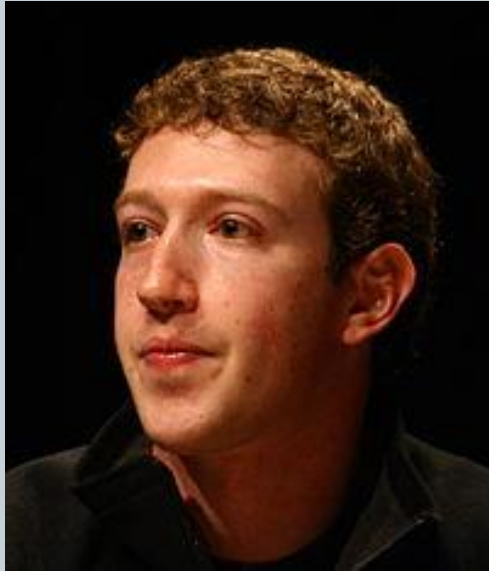
- Part 1: Human History
- Part 2: Our Digital Trail
- Part 3: The Security Link
- Part 4: Attempts to Resolve Privacy and Security
- Part 5: The Possibilities
- Part 6: Considerations

# Human History



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# The Death of Privacy



# Privacy As An Anamoly?



# Dyer's Grand Historical Theory



- For the first million years of humanity until about 5000 years ago
  - Groups of 100 or so hunter gathers
  - Fairly well defined geographical region
  - Decisions made by discussion and consensus
- About 5000 years ago, we invent: agriculture, city, mass society
  - 10 000 to 20 000 people living in cities that need hierarchy to function
  - With hierarchy comes universal dictatorship, tyranny and oppression

# Dyer's Grand Historical Theory



- 17<sup>th</sup> , 18<sup>th</sup> , 19<sup>th</sup> , 20<sup>th</sup> centuries
  - Begin to acquire technologies (books, newspapers)
  - Technologies enable millions of people to have conversations about how our society will function
- Where the technology is, the old egalitarianism re-emerges
  - Thomas Paine writes the first newspaper in the colonies, and two thirds of the population reads it
  - Democratic revolutions begin: English Revolution, 1640; American Revolution, 1776; French Revolution, 1789

# Dyer's Grand Historical Theory



- The technology – not culture, or ethnicity, or a specific philosophy – enables us to recover our old values
- It's the technology that can enable egalitarianism across the world, regardless of the size of our society



# Our Digital Trail



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# Babies



**lolashadowland** arian flanders

**Baby Yuri was born** yesterday at 12:38 pm.. all's well and healthy

2 minutes ago

td.

**thetalldesigner** The Tall Designer

Ahlia Verity Cheverton was **born** fit and well at 02:39 on 26/10/2010.

Mother, **baby** & father all very very tired, but very very pleased.

from Brighton and Hove, Brighton and Hove

10 minutes ago

# Teenagers



- 6 Pennsylvania high school students (ages 14 through 17) are facing child pornography charges after three teenage girls allegedly took nude or semi-nude photos of themselves and shared them with male classmates via their cell phones.
- "It's very **dangerous**," he said. "Once it's on a cell phone, that cell phone can be put on the Internet where everyone in the world can get access to that juvenile picture."

<http://www.msnbc.msn.com/id/28679588/>

# College Students







<http://www.nytimes.com/2008/11/30/business/30privacy.html>

# Adults



- Chipotle has responded to customer problems through Twitter; ChipotleTweets is a list of answers to consumer questions and responses to problems.
- "It's the **democratization** of fine dining," he said.





**Kathy**  **Jeanette** : I discovered by accident a paper that showed that  was committing fraud with one of the accountants. I shared it with the accountants, who had hearsay evidence that went along with the form I found. Over the course of the last 3 weeks, the entire staff, minus one, has resigned. I will be doing the bank deposit every Friday until November 1. We have contacted the IRS, the  Dept of Revenue and Social Security. All of us wanted to be gone before they come in to shut the place down.

Please do not share this info with anyone here. It is important to let the investigation play out in it's own time. I don't know if this job will happen, but I feel confident that I did the right thing and I know the Lord is in control.


40 minutes ago · [Comment](#) · [Like](#) · [See Wall-to-Wall](#)



**Kerri**   Kathy you may want to delete this and send as a private message instead. Other people can see this post.

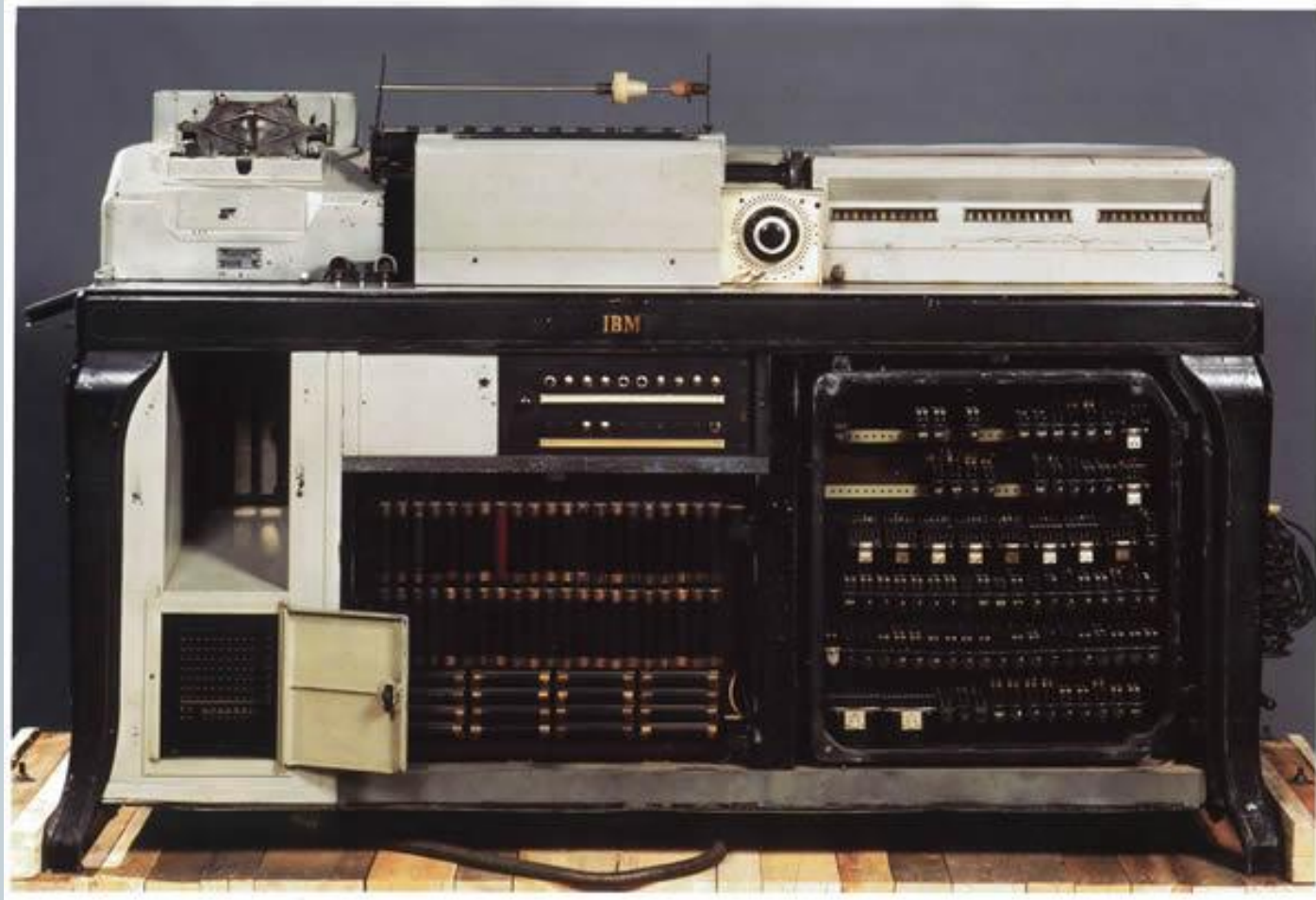
36 minutes ago · [Like](#)



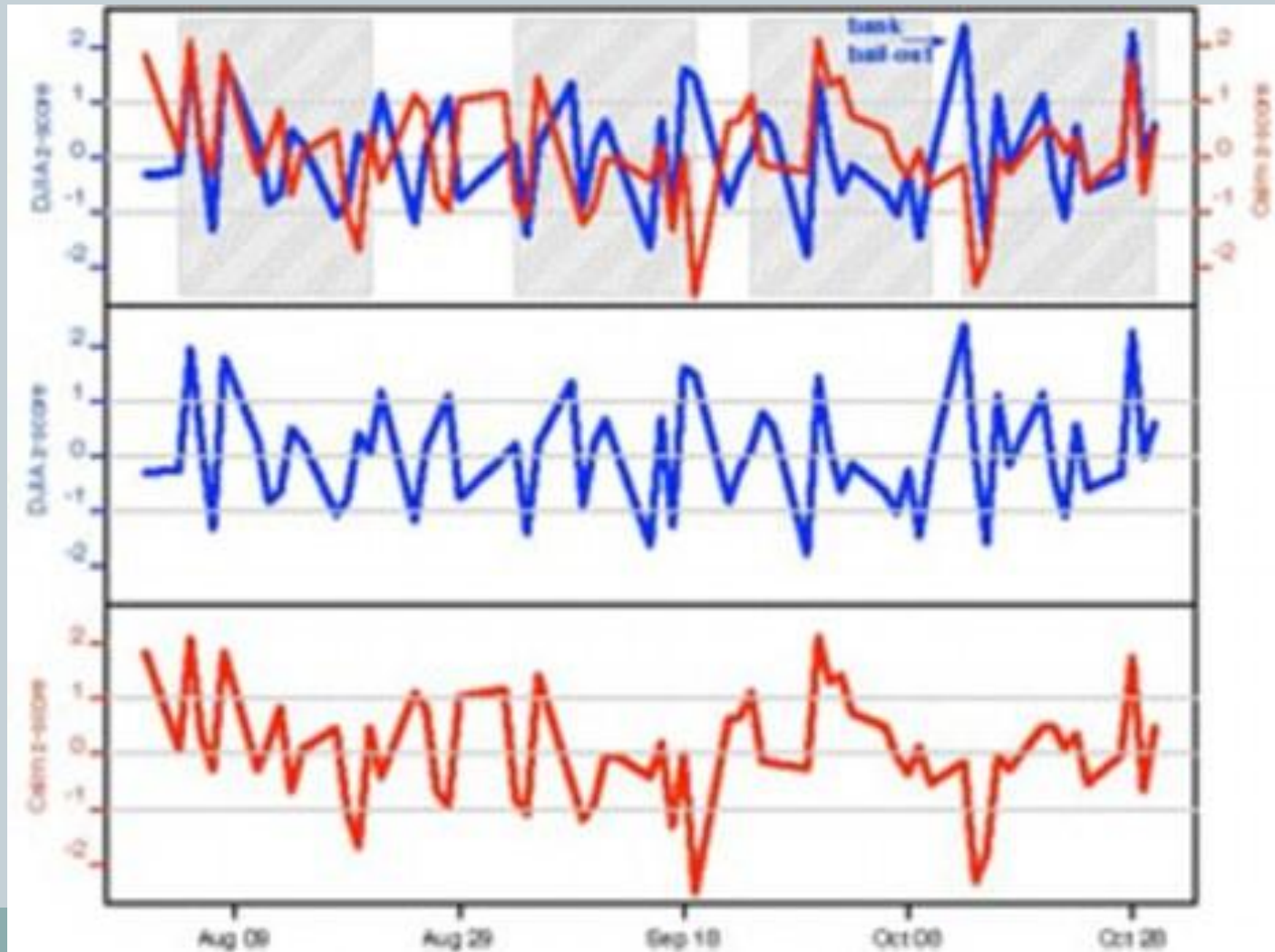
**Coleen**  Hey cuz... we can all see this. Anyone who can see your wall can read this.. sorry

24 minutes ago · [Like](#)

# Functionality Was the Driver



# Twitter Predicts the Dow





# Because That's Where the Profit Is



**GlowCaps™**  
**light and sound**  
remind you to take your  
prescriptions every day



# The Link To Security



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# The Security Push



Personal Information is a Commodity

Therefore

Privacy is an Obstacle to the Sell

# The Sales Pitch



- Buy our data, it's accurate
- Buy our data, it's valid
- Buy our data, it's reliable
- Buy our data, it's timely
- Buy our data, it's relevant
- Buy our data, it's useful

# The Results?



1. Standards that don't work
2. The infrastructure is pit against the user
3. Some people profit
4. We spy on each other
5. Complex solutions get applied to problems that we never had

# Example 1: Standards That Don't Work



- PCI DSS is intended to secure financial transactions
- Supermarket chain Hannaford Bros. Inc. passed its most recent audit for compliance for PCI before hackers breached its computer systems and compromised more than 4 million card numbers

<http://www.digitaltransactions.net/newsstory.cfm?newsid=2603>

# Example 2: Infrastructure v. End User



<http://chronicle.com/article/Chapel-Hill-Researcher-Fights/124821/?key=SmN7cgVsO3RHZ3pqYjgRMDwBP3xsYhh7YHVJOXB6bl9TGQ%3D%3D>

# Example 3: A New Market on Feelings



- Marketers today aren't mining simply for information on click-throughs and page views--**they want to mine** the secrets of the human heart and come up with hard data on soft concepts such as "mood" and "passion."
- Collective Intelligence is shared or group intelligence that emerges from collaboration and competition
  - Sense Networks proved there was a wealth of useful information hidden in the digital archives of GPS data generated by taxi rides

<http://mobile.technologyreview.com/business/26431/>

<http://www.chron.com/disp/story.mpl/business/6138028.html>



## Example 4: We Tell Tattles



- “The problem with CCTV is that while cameras are practically everywhere, there’s hardly anyone watching them in real time,” Morgan said. “Most people know this, so CCTV is **no longer the deterrent** it used to be, and crime is rising.”

<http://www.torontosun.com/tech/news/2010/10/05/15585971.html>

# Example 5: Complex Solutions to Nothing



- Since the 1980s, children in the US have been issued Social Security Numbers (SSN) at birth. For credit purposes, it cannot be used for 18 years. Unfortunately, credit issuers do not currently have the **ability to verify** if a SSN belongs to an adult or a minor. If they knew that the SSN presented belonged to a minor they would automatically deny opening a credit account.

<http://emergentchaos.com/archives/2010/08/how-not-to-address-child-id-theft.html>

# Privacy versus Security in Profit



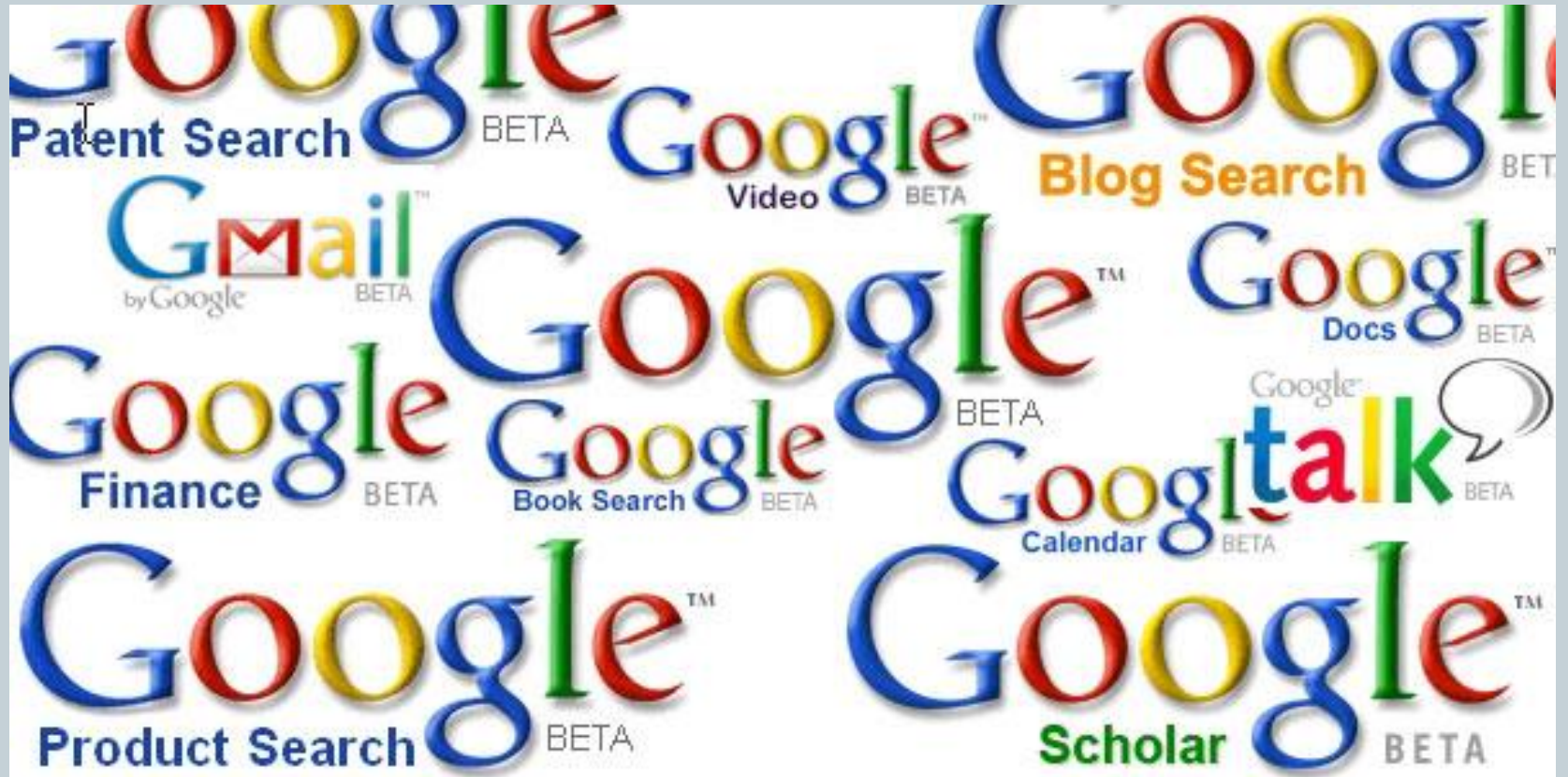
- Security focuses on data protection techniques; the time to talk privacy is before collection
- Security focuses on reliable and valid data; but we aren't talking about data mining anymore, we're talking about Reality Mining
- There's a considerable distinction between Government and Corporations, and who we should be more afraid of

# Who Do You Worry About Most?



<http://www.cbc.ca/canada/ottawa/story/2010/10/25/veterans-affairs-bruyea.html>

Or?



# Nothing to Hide



- "If you aren't doing anything wrong, what do you have to hide?"

[http://www.schneier.com/blog/archives/2006/05/the\\_value\\_of\\_pr.html](http://www.schneier.com/blog/archives/2006/05/the_value_of_pr.html)

# Recognizing the Problem



- *Quis custodiet custodes ipsos?*
  - Juvenal, 2<sup>nd</sup> century
- “Absolute power corrupts absolutely.”
  - John Emerich Edward Dalberg-Acton, 1887
- *Qu'on me donne six lignes écrites de la main du plus honnête homme, j'y trouverai de quoi le faire pendre.*
  - Cardinal et Duc de Richelieu , 1896

# A Legal Right to Privacy



- United Nations Universal Declaration of Human Rights, Article 12
- Canadian Charter of Rights of Freedoms, Section 8



# Attempts to Resolve Privacy and Security



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# Approaches in Computer Science



- P3P, a protocol to allow websites to declare intended use of information collected about browsing users
- Anonymous emailers
- Anonymous proxy servers
- Ontologies to support policy enforcement
- Taxonomies to classify breach types

# De-Identification



- Attempts to blur the identity of individuals have only a limited capability, she said. The researchers encrypt the data to protect against identifying particular people, but that has limits.
- “Even though we are protecting the information, it is still subject to subpoena and subject to bullying bosses or spouses,” she said.

[http://www.nytimes.com/2008/11/30/business/30privacy.html?\\_r=1&ref=business&pagewanted=print](http://www.nytimes.com/2008/11/30/business/30privacy.html?_r=1&ref=business&pagewanted=print)



# Approaches in Behavioural Sciences



- Cost-benefits analysis of privacy decisions (Laufer & Wolfe, 1977)
- Categorization of data subjects as privacy unconcerned, pragmatic and fundamentalist (Westin, 1991)
- Quantifying the value of privacy (Huberman, 2005)
- People are completely irrational, and one's own evaluation of privacy is probably inconsistent and unstable (Acquisti, 2010)

# Human Computer Interaction



- HCI is the study of the interaction between people and computers
  - Card, Moran and Newell, 1983
- Privacy is of particular interest because of the historically different approaches taken by these two fields

# Value Sensitive Design



- Information systems design methodology emphasizing the values of direct and indirect stakeholders
  - Batya Friedman and Peter Kahn, 1980s
- Design is intended to be iterative to respond to the human factor, for example, the users changing privacy requirements

# Privacy Design



A Value on Privacy Protection

+

Irrational People

=

Design a System that Protects Privacy



# “Baked In” Security



# The Possibilities



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SECURITY**

# Jesse Schnell



# Jesse Schnell



- “It could be that these systems are all crass commercialization and it’s terrible; but it’s possible that they’ll inspire us to be better people.”

<http://g4tv.com/videos/44277/dice-2010-design-outside-the-box-presentation/>

# What's At Stake



# Tyler Clementi



- Dharun Ravi and Molly Wei were charged with a criminal invasion of privacy; they placed a webcam in Tyler's dorm room and posted the live video stream on iChat

<http://www.cato-at-liberty.org/what-privacy-invasion-looks-like/>

# The Use of Technology




**Dharun**

Anyone with iChat, I dare you to video chat me between the hours of 9:30 and 12. Yes it's happening again.

about 21 hours ago via Power Twitter

Name Dharun Ravi  
Location (IT:

**Tyler Clementi** Jumping off the gw bridge sorry  las

Wall Info Photos

Write something...

Attach:   



**Tyler Clementi** was tagged in      **album**

**Bigger Night 2**



 Monday at 2:38pm



please call me.

**NOW.**  
and tell me you're okay.  
or i'm going to go find you.

September 25 at 8:50am - Comment - Like - See Wall - to

 3 people like this.

Write a comment...

# Considerations



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# Roots



Egalitarian Hunter Gathers

+

Communal Decision Making

=

Technical Systems That Don't Remember

# Reframe



- It's a common legal requirement to prove necessity prior to collection even with legal authority
- How many systems actually require personal information to provide a service?
- Do we really need to know WHO you are to provide you a service?

# Redesign



- Do we absolutely have to collect information?
- Does a system that is intended to support the delivery of service require proof of identity?
- Do transactions have to be recorded?
- Does data have to be retained?

# Conclusion



**TRACYANN.KOSA@UOIT.CA**  
**@TRACYANNKOSA**