# Privacy at the Edge

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“Action is indeed the sole medium of expression for ethics.” –Jane Addams

# Communication

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Specific sub-questions I will try to answer:

- What domain of digital communication should we be most concerned about?
- Which human rights concerns would a solution need to address?
- What kind of diversity is desirable?
- What are the requirements to get there?
- Where might this get us exactly?

**What domain of digital communication should we be most concerned about?**

# Surveilance concerns

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- Everybody knows about Internet surveilance.
- But is it **that** bad?
  - You can choose when and where to use the Internet
  - You can anonymously access the Web using Tor
  - You can find open access points that do not require authentication
  - IP packets do not include your precise location or name
  - ISPs typically store this meta data for days, weeks or months

# Where is it worse?

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**SWIFT/Mastercard/Visa are way more invasive.**

# What is worse:

- When you pay by CC, the information includes your name
- When you pay in person with CC, your location is also known
- You often have no alternative payment methods available
- You hardly ever can use someone else’s CC
- Anonymous prepaid cards are difficult to get and expensive
- Payment information is typically stored for at least 6 years

# Predicting the Future

- Google and Apple will be your bank and run your payment system
- They can target advertising based on your purchase history, location and your ability to pay
- They will provide more usable, faster and broadly available payment solutions; our federated banking system will be history
- After they dominate the payment sector, they will start to charge fees befitting their oligopoly size
- Competitors and vendors not aligning with their corporate “values” will be excluded by policy and go bankrupt
- The imperium will have another major tool for its financial warfare

**Which human rights concerns would a solution need to address?**

# Design goals for the GNU Taler Payment System

GNU Taler must ...

1. ... be implemented as **free software**.
2. ... protect the **privacy of buyers**.
3. ... must enable the state to **tax income** and crack down on illegal business activities.
4. ... prevent payment fraud.
5. ... only **disclose the minimal amount of information necessary**.
6. ... be usable.
7. ... be efficient.
8. ... avoid single points of failure.
9. ... foster **competition**.

# Taler in Operation

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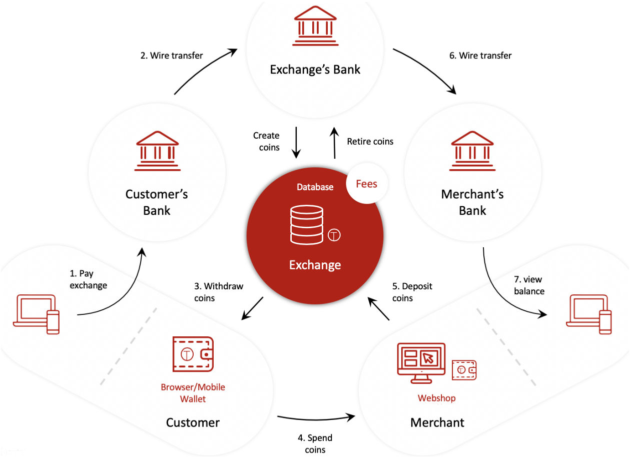

## What kind of diversity is desirable?

# Diversity

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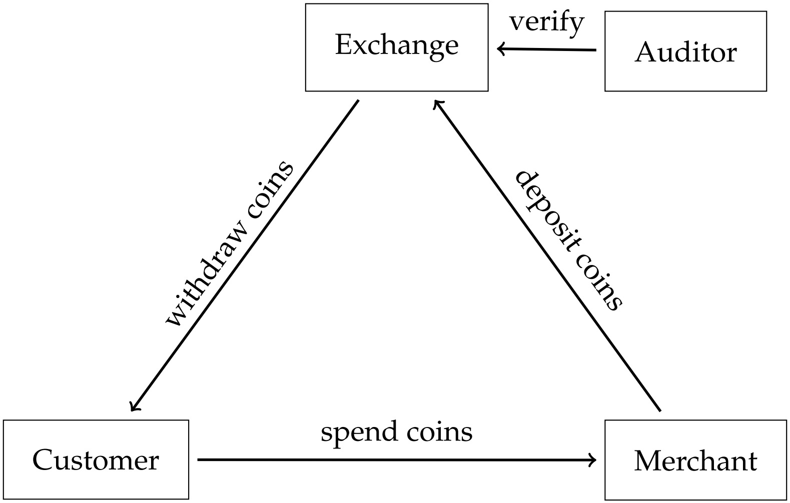
- GNU Taler promotes **one** payment protocol
- There **may** be multiple implementations
- Diversity of **commercial operators** is crucial

## What are the requirements to get there?

# No more sheep!

# Transformation Domains



**Where might this get us exactly?**

# Visions

- Be paid to read advertising, starting with spam
- Give welfare without intermediaries taking huge cuts
- Forster regional trade via regional currencies
- Eliminate corruption by making all income visible
- Stop the mining by making crypto-currencies useless for anything but crime

# Do you have any questions?

- `https://taler.net/`
- Slides will be published at `https://grothoff.org/christian/`.
- Jeffrey Burdges, Florian Dold, Christian Grothoff and Marcello Stanisci. *Enabling Secure Web Payments with GNU Taler*. **SPACE 2016**.
- David Chaum, Amos Fiat and Moni Naor. *Untraceable electronic cash*. **Proceedings on Advances in Cryptology, 1990**.
- Phillip Rogaway. *The Moral Character of Cryptographic Work*. **Asiacrypt**, 2015.
- Florian Dold. *The GNU Taler System: Practical and Provably Secure Electronic Payments*. **PhD thesis. University of Rennes 1**, 2019.