LIS-5411

Anonymity
and
"Social-Surplus"

A working definition of privacy

Secrecy + Anonymity +

A belief in the first two.

A working definition of privacy

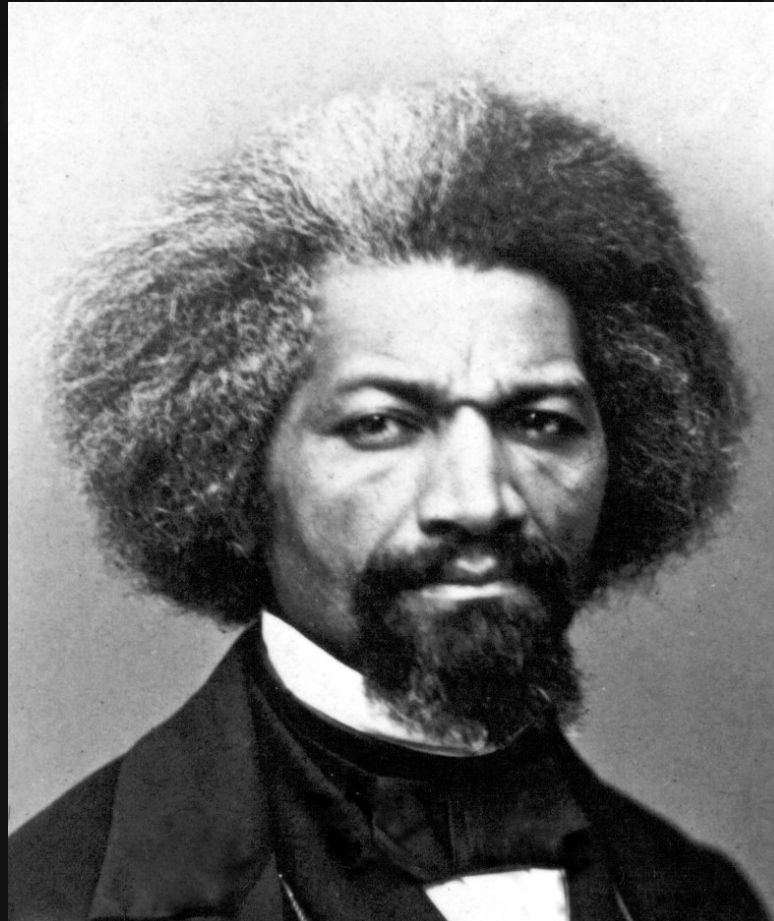Technical secrecy = Encryption.

Let's talk technical anonymity.

Secrecy ≠ Anonymity

- They are related, but can be different.

  Secrecy = hides the contents of the message

  Anonymity = hides the identity of the sender

How did he learn he was a slave?

Why Anonymity?

Shouldn't you always be personally responsible for what you say? I mean, youtube comments?

(similarly, why encryption? The following applies there too)

"Great invention..
..can you disable the "bank robbery getaway" function?

An argument "in favor" of Dangerous Technologies

- Yes, new dangers are created but...

- – there are legitimate needs

- – there will be a demand →

- Someone WILL have it, perhaps better to decentralize/democratize it.

Anonymity: these guys liked it...

History of Anonymity

- "Silence Dogood"

  Constitutional-ish

  (it doesn't say "right to anonymity," per se...
  .but it doesn't say "right to privacy" either..)

  ..and don't forget the most important
  anonymous speech of them all....

VOTING!

We say "secret" ballot, but that's technically wrong....think about it.
(what is hidden, **content** or **identity?**)

Reduction of personal risk

- – whistleblowers

- – crime victims

- – (literal) minorities

  – sometimes good ideas are (really) unpopular.

- – it's part of the 1st amendment.

Technical Anonymity
(...is very hard)

- No magic math here, unlike encryption..

- But we can use real life analogies

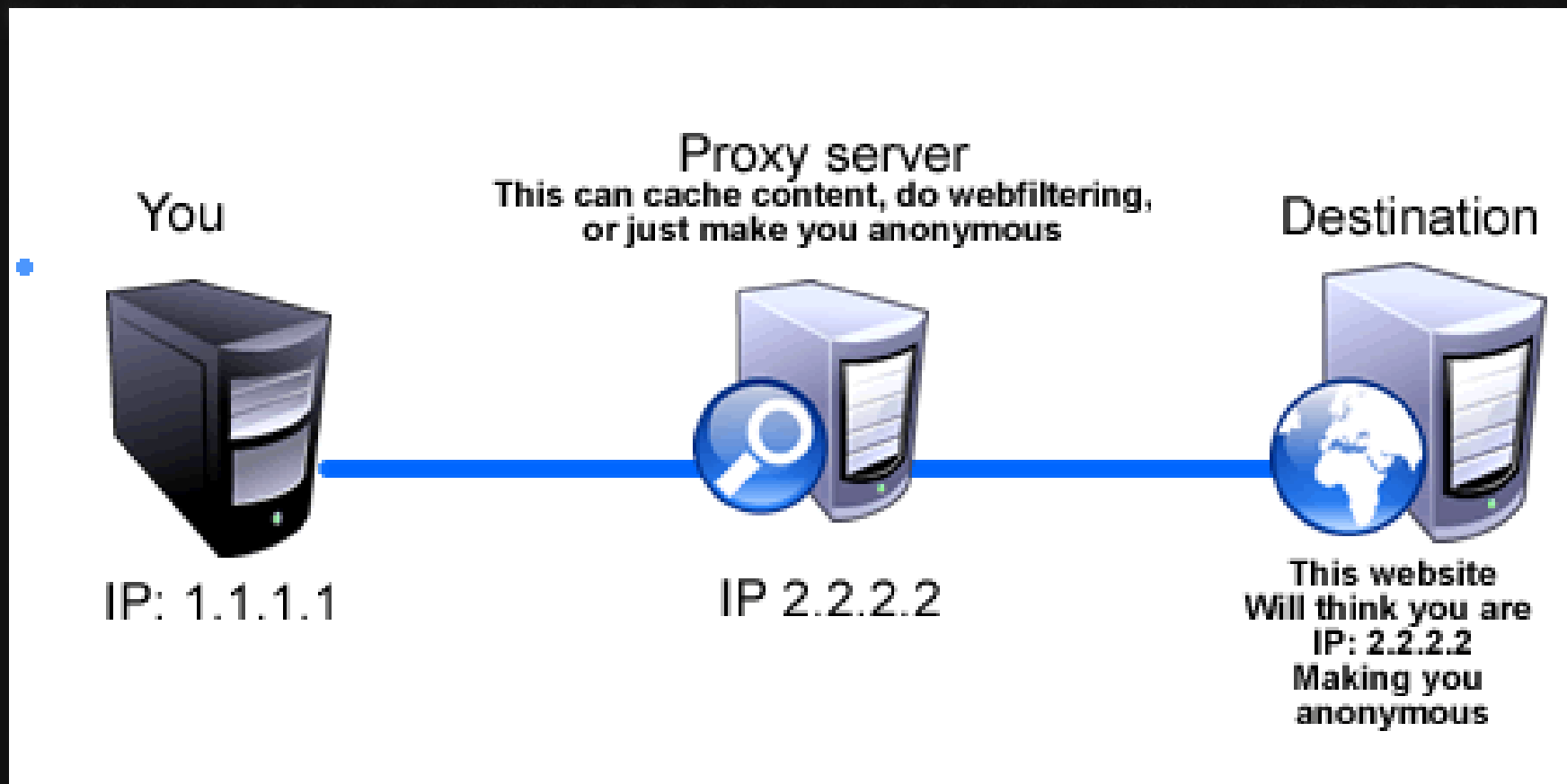So: You are a whistleblower, and need to get important information to the newspaper.

How?

A Trusted 3ʳᵈ Party

- This is good --- but only as good as the 3ʳᵈ party.

  Stranger? Can you trust them?

- Close friend? But what about
  - – - detection
  - – - selling out
  - – - endangering the friend?

3rd Parties online = Proxy

You
IP: 1.1.1.1

Proxy server
This can cache content, do webfiltering,
or just make you anonymous
IP 2.2.2.2

Destination
This website
Will think you are
IP: 2.2.2.2
Making you
anonymous

Is that like a VPN?

Is that like a VPN?

Sigh. Yes.

Adventures in badly named things in computing.

Is that like a VPN?

VPN. Virtual Private Network.

Network – A bunch of computers connected together.

(note – there is no technical difference whatsoever between this "network" and "cloud," but I digress...

Is that like a VPN?

VPN. Virtual Private Network.

Private Network – Think a bunch of computers connected together in the same room, only to one another. You know, privately.

Virtual Private Network – Same as above, but **virtualized** through the internet.

Is that like a VPN?

So why do we call proxies that?

It's the same underlying technology (e.g OpenVPN or tinc) aka

"Encrypted/private connections between at least two computers for the purpose of hiding what's happening in between"

(but in the case of the paid service proxy, to also provide anonymity)

BUT. Proxies or VPNS

...there are always "endpoints," and that's your vulnerability. We need to go deeper...

As promised, no new complexity

There's not much **math** here. A pretty simple concept, instead.

Instead of **one** middleman, use MULTIPLE.

Hide the payload by getting lost in a crowd.

..eg

"I am Spartacus!"

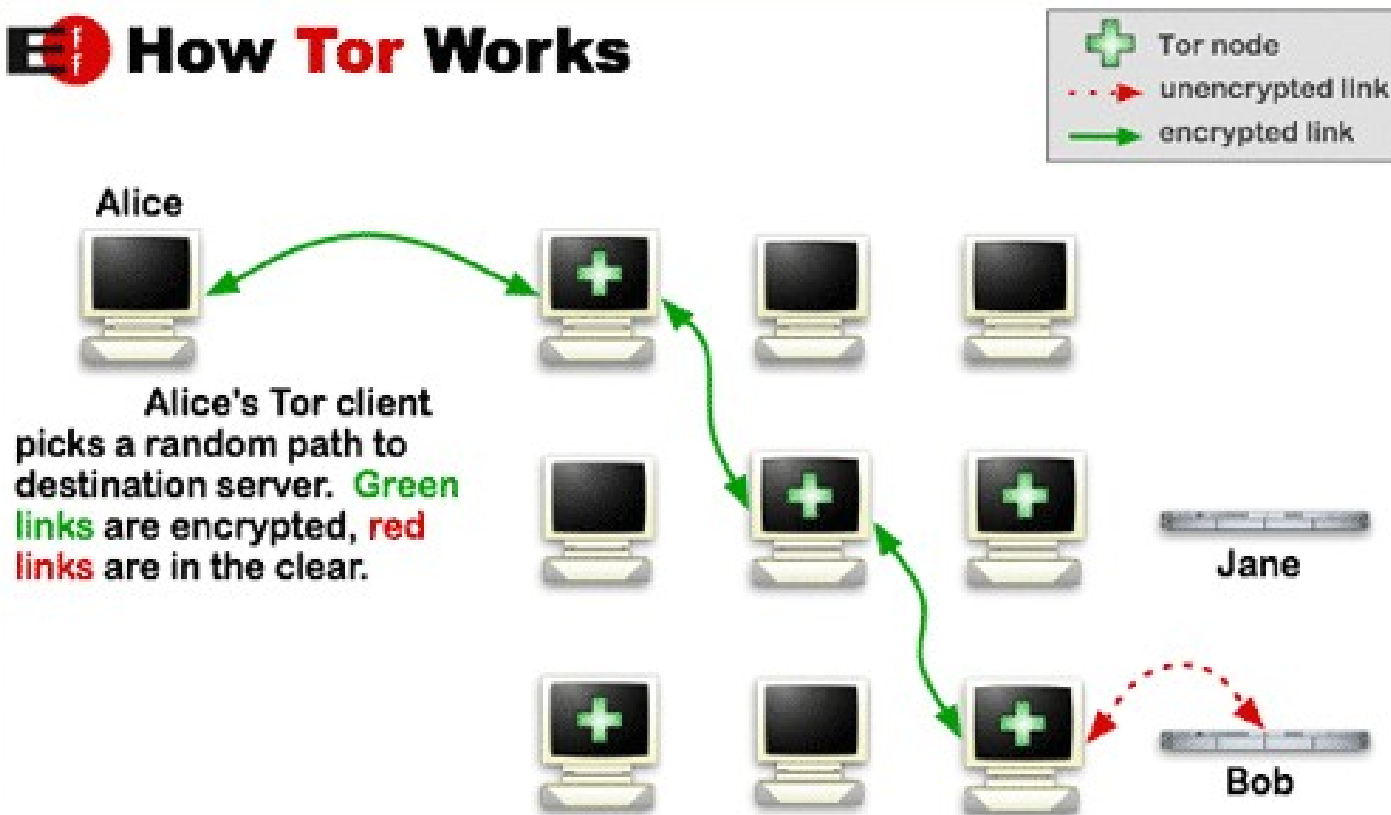"Don't worry bout the law
they can't arrest us all"

"Don't worry bout the law they can't arrest us all"

Tor

How **Tor** Works

Legend:
- Tor node
- unencrypted link
- encrypted link

Alice

Alice's Tor client picks a random path to destination server. Green links are encrypted, red links are in the clear.

Jane

Bob

More on Tor

- Why allowed? Military needs it too.(who invented it?)
- NOT fully encrypted by itself (but you can just add it)

- MANY other possible attacks (cookies, js)
- Exit Nodes are dangerous

- Like encryption, yes, the bad guys will use it too.

Dark Web

- .onion sites

- The (former) Silk Road

All well and good

- buy a laptop at a pawn shop

- go to a different town

- use mcdonalds wifi

- use "tails" or another one-time distro

- deposit in trash

Practical Online Anonymity

...would require a substantially different "web,"

because the web we use keeps logs.

Of everything, because that's sound IT practice. Boring and practical...

..but ends up making anonymity EXTREMELY difficult.

Practical Online Anonymity

All the services and sites keep logs.

To an (unfortunate) extent, we will have to rely on policy and practices of the providers.

Be vigilant – because….

So far, we've been thinking about "speaking"

But what about:

"hearing?"
"reading?"
"watching?"

...and "social media-ing?"

Back to Frederick Douglass...

Sophie Auld, who was bored one day,

taught Frederick to read.

Quick side note
(that happens to be literally the most important thing)

Reading, presently, is the only way to become smarter.

Also, you only TRULY control one thing in your life.

(See, also, "This is Water" – David Foster Wallace, Kenyon Commencement Speech)

Back to Frederick Douglass...

Sophie Auld, who was bored one day,

taught Frederick to read, ILLEGALLY.

From there, he traded for, scammed, and stole books.

(though the books weren't necessarily kept forever...Perhaps we should say he "illegally downloaded them..."

Back to Frederick Douglass...

Luckily – books don't talk. They don't squeal on you, they don't run back to their owners and tell the owner who read them, and when, and how.

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Luckily – books don't talk. They don't squeal on you, they don't run back to their owners and tell the owner who read them, and when, and how.....

Well, they used to not do that, anyway :)
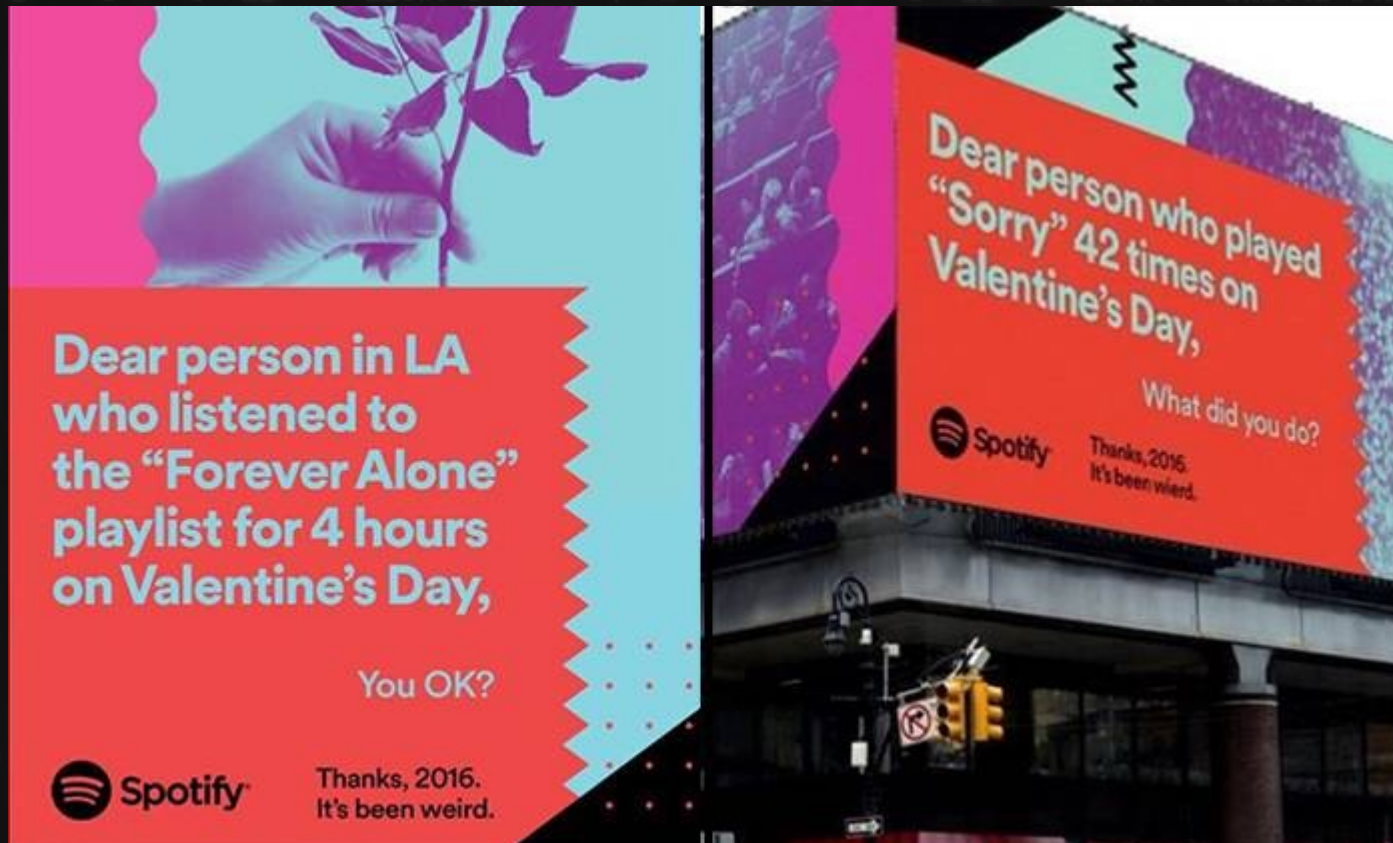
Back to Frederick Douglass...

Consider – "creeping de-anonymization of consumption"

If you're using:
- Amazon Books

- Netflix/Hulu
- Pandora/Spotify

... your stuff is reading you, too.

AND NOW THEY THINK ITS CUTE

And social media?

That's the business model.

Watch **everything** you do and "monetize" it.

Quasi-Anonymity

And

Cognitive/Social Surplus

Julie Cohen, "Copyright Management in Cyberspace"

"A fundamental assumption underlying our discourse about the activities of reading, thinking, and speech is that individuals in our society are guaranteed the freedom to form their thoughts and opinions in privacy, free from intrusive oversight by governmental or private entities."

Econ 101

I'm bringing up "Economics" (in our case, "American capitalism") mostly to criticize it; unless you're reading a wide array of scholarly material, odds are what you're looking at is no better than astrology...

(See "Confessions of an Economic Hit-Man" for why this is so)

Econ 101

Nonetheless, these ideas must be learned – not because they are necessarily true, but because people believe they are true and then construct policy around them.

(but seriously, one or two semesters of Econ is probably *worse* *than none)*

Econ 101

"The study of how to satisfy unlimited needs with limited resources"

Econ 101

"The study of how to satisfy unlimited wants with limited resources"

INCENTIVES!!

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...is frequently a silly and cruel idea

Cognitive Surplus
(thanks, Clay Shirky)

- Industrial Revolution!

- The people of London moved from the farm to the city...meaning

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(thanks, Clay Shirky)

- Industrial Revolution!

- The people of London moved from the farm to the city...meaning

  No more dawn to dusk, but 8 hour days.

  What did they do?

Gin. Lots of Gin.

No, really. LOTS of gin

(any resemblance to college life is purely coincidental, I'm sure)

What replaced gin in the good ol' USA?

What replaced gin in the good ol' USA?

But then, the Internet...

BINGE-WATCH

Okay, that..but what else?

But then, the Internet...

Okay, THAT TOO..but what else?

Econ 101: How to make complicated things with a bunch of people?

"Incentives" or "coercion"

Either way, it's – 'do this or you don't eat.'
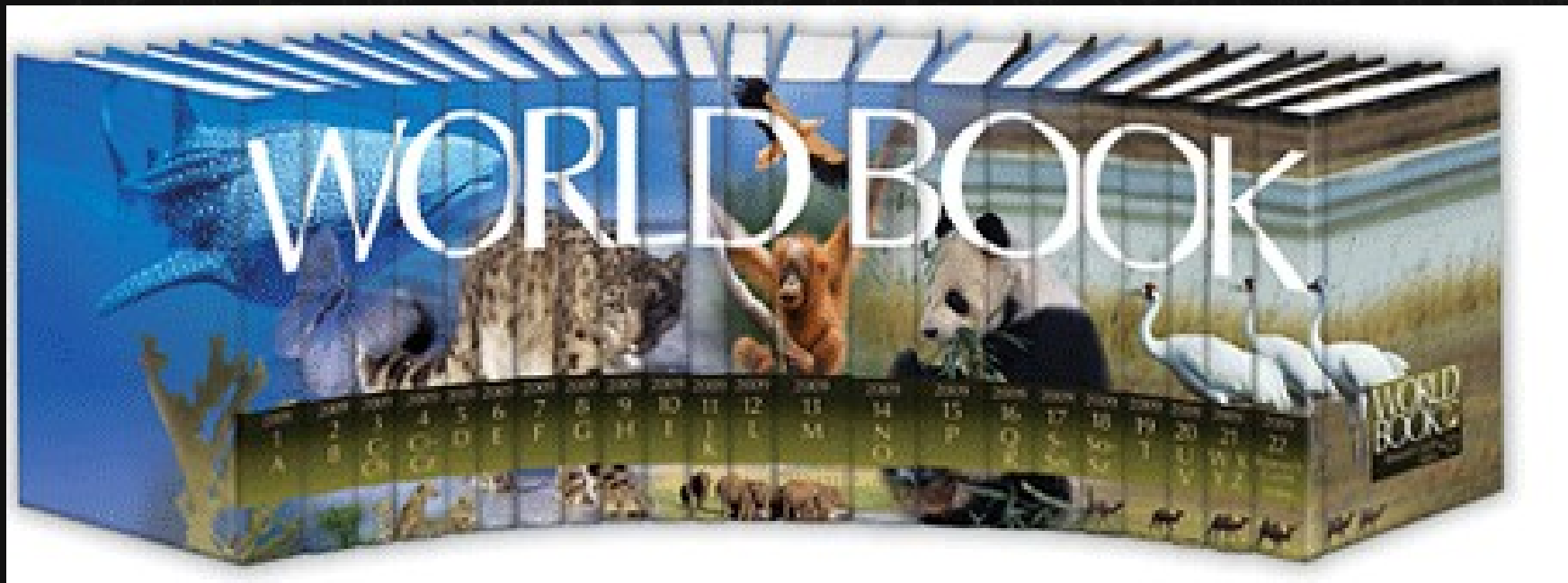
This is basic economics, right?

....well, it **was**...

Also, the converse idea, that we hear:

"If you can't get paid to do it, it won't get done."

(pity the poor music industry)

Encyclopedias?

Spontaneous Organization

- Usually, you come up with a concrete purpose or a goal, THEN organize a group around achieving that..

  But this can now happen BACKWARDS thanks to the internet. The group organizes, THEN just sort of ends up doing something surprisingly useful/complex.

Spontaneous Organization

Sometimes, but not always, fueled by

(pseudo) Anonymity

New Theory:
Moglen's Metaphorical Corollary to Faraday's Law

Faraday's Law: If you wrap a wire around a magnet and spin it, electricity flows through it:

New Theory:
Moglen's Metaphorical Corollary to Faraday's Law

Moglen's Corollary:

Wrap the Internet around every person on the planet and spin the planet, then "software" (i.e. beauty, science and culture) " flows in the network.

People will create things for one another's pleasure and to conquer their uneasy sense of being too alone.

Flash mobs

Ice Cream (in Belarus?)

Arrested.

4chan? /b/

"Anonymous"

Reddit Stuff

- *Movie Plots*
- Random acts of Pizza
- Etc etc etc

But of course, the good stuff..

- Wikipedia

- Linux

-

-

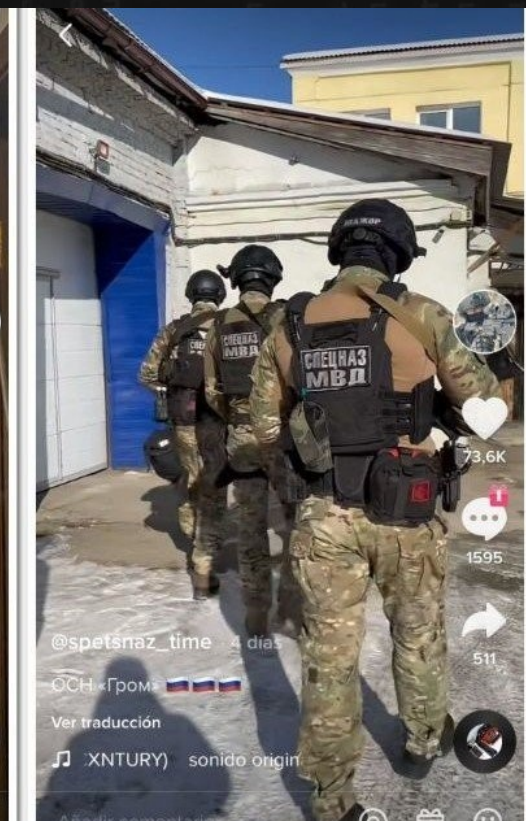- Millions of specialized message boards on useful information, and so on…

Social Activism

- Occupy Wall Street

- Black Lives Matter

- Ice Bucket Challenge

...and so on

Slacktivism?

(honestly, nah)

The end of "history?"
a.k.a. – real time war?

But of course..

If there's so much "surplus"
what is going on with "the economy?"

Crowdfunding? Kickstarter

- Cool! Pay for things that don't yet exist.

  Reduction of risk, basically.

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  Reduction of risk, basically.

  (this was an old slide. For video games, great?

  for healthcare? Not so much.)

Enter Capitalism:
Have we entered another era?

One of predominant

"social surplus exploitation?"

"Anything cool, new, exciting is **immediately** converted into advertising or a revenue stream?"

"Crowdsourcing?"

- Yes, but notice the "sourcing" part.

  Frequently, this is where the crowd does the work and someone else gets paid.

  But we're all doing it, I suppose...

"Crowdsourcing?"

e.g.

From couchsurfing to Airbnb?

From ridesharing to Uber?

"Crowdsourcing?"

e.g.

From couchsurfing to Airbnb?

From ridesharing to Uber?

- Yes.

The unreasonable effectiveness of scale

- Get in early and fast and dominate for cheap, law be damned..

- Then slowly ratchet up your prices to make the shareholders happy.

"Crowdsourcing?"

And, of course...

Social media.

1) How do you use it?
2) How does it make money from you?
3) What externalities does it cause?