IDBM NEPPI 2020 WEEK VI

The dilemma of 'free' digital services

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The Dilemma of Free Digital Services

- The availability of free digital services is wonderful when looked from an individual's point of view

- The macro view reveals a very problematic situation

Free Digital Services
An Individual's Point of View

- You get technically superior software, which is:
  - Affordable (=seemingly free!)
  - Available
  - Accessible
  - Personalized
  - Collaborative (in real-time)

- The services work on any platform globally

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Free Digital Services
An Advertiser's Point of View

- Well-targeted message delivery
- Excellent analytics

Free Digital Services
The Macro View – What is the Problem?

Free Digital Services
The Macro View – What is the Problem?

- The Giant gets it all
  - Power
  - Money (! even though its 'free' for you)

- The ethical conduct of the Giant is questionable
  - Selling your attention to the highest bidder
  - "Social media platforms profit from our outrage, confusion, addiction, and depression. It's a feature, not a bug."

https://ledger.humanetech.com/

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How the Giant becomes unbeatable, and why it is inevitable without interventions

- Money is an outdated tool for data-economy
- Size and quality of connections define the winner

Money:
Outdated Tool for Data Economy

- Money is an invention for exchange
  - You get something and give money

- Archaic
  - Money has existed for thousands of years in various forms

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The Value of Money is a Belief

- Every since 1971 all (Western) money has had virtually no inherent value

- Banks, even in Finland, create money from promises
  - When you take a loan, a promise is made (debt to the central bank)
  - By fulfilling the promise, you create the money (i.e. pay the loan back)

- Belief in a money can die
  - e.g. Venezuela/Bolívar

GUILLERMO LEGARIA / GETTY IMAGES

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Data Economy Is Not about Exchange:
It Is about Sharing

- Sharing works differently from exchange

- When you share
  - A new copy of data is made
  - The copy is set into a different system

  - The original copy remains in the original system

The Giant <u>Values</u> Your Data

- You are granted access to the Giant's 'free' digital services, because you share your private data

- Your <u>data has value</u> (however, unaccounted)

What is the Value of Data

- Nikander et al. (2020) has coined the term 'anti-rival' goods
- Rival goods: hammer and nails
  - Cannot be used at the same time, value is subtracted
- Non-rival goods: club benefits
  - Can be used at the same time, value remains
- Anti-rival goods: private data
  - Shared, **value increases** with copies in larger systems

Nikander, P., Eloranta, V., Karhu, K., & Hiekkanen, K. (2020). Digitalisation, anti-rival compensation and governance: Need for experiments. *Proceedings of the Nordic Workshop on Digital Foundations of Business, Operations and Strategy*. The Nordic Workshop on Digital Foundations of Business, Operations and Strategy, Espoo, Finland.

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The Genesis of the 'Big Mind'

- We are witnessing ever-bigger data ecosystems emerge
  - More sensors and interfaces collecting data
  - More complex systems in associating and actuating data
- The bigger and more complex the system, the bigger value your private data will be within that system

- Sharing of private data disproportionally benefits the Giant
  - It will gain and retain an advantage – always at least a step ahead
  - Easy to eat or beat the competitors

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How Does the
Genesis of the 'Big Mind' Happen

- Four essential repeated activities:
  - Collecting data (sensing)
  - Associating data (interpreting)
  - Synthesizing data (planning)
  - Actuating data (acting)

A Brief Historical Detour:
Intelligent Software Agents (2009)

- "Siri is to launch an ISA that will be able to perform simple tasks on the user's behalf. According to Cheyer, we are on the brink of an era in which the software agent will change the era of search. He hopes that it will constitute the third phase of the Web."

Adam Cheyer, co-founder of Silicon Valley-based startup Siri.

https://eandt.theiet.org/content/articles/2009/06/software-servants/

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Siri was a CALO spin-off

- Cognitive Agent that Learns and Organises (CALO)
  - U.S. Defence Advanced Research Projects Agency (DARPA) funded project 2003-2008

  - "The goal of the project is to create cognitive software systems, that is, systems that can reason, learn from experience, be told what to do, explain what they are doing, reflect on their experience, and respond robustly to surprise."

http://www.ai.sri.com/project/CALO

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Personal Assistant the Learns (PAL)

- https://pal.sri.com/

- The DARPA PAL program (the Personalized Assistant that Learns) focused on improving the way that computers support humans through the use of ***cognitive systems***—that is, systems that reason, learn from experience, and accept guidance in order to provide effective, personalized assistance.

BDI Software Model

- http://www.ai.sri.com/~spark/

- The belief–desire–intention software model (BDI) is a software model developed for programming intelligent agents.

- BDI agents are able to balance the time spent on deliberating about plans (choosing what to do) and executing those plans (doing it).

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Case Google:
Any Evidence of the Above?

- Four essential repeated activities:
  - Collecting data (sensing)
  - Associating data (interpreting)
  - Synthesizing data (planning)
  - Actuating data (acting)

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What Are Google's Sensors?

Android Auto	Android OS	Android TV	Calendar
Cardboard	Chrome	Chrome Web Store	Chromebook
Chromecast	Connected Home	Contacts	Digital Wellbeing
Docs	Drive	Earth	Finance
Forms	Gboard	Gmail	Google Alerts
Google Arts & Culture	Google Assistant	Google Authenticator	Google Chat
Google Classroom	Google Duo	Google Expeditions	Google Family Link
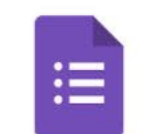
Google Fi		Google Files		Google Find My Device		Google Fit
Google Flights		Google Fonts		Google Groups		Google Home App
Google Input Tools		Google Lens		Google Meet		Google One
Google Pay		Google Photos		Google Play		Google Play Books
Google Play Games		Google Play Movies & TV		Google Play Pass		Google Play Protect
Google Podcasts		Google Shopping		Google Street View		Google Tasks
Hangouts		Keep		Maps		Measure
Messages		News		PhotoScan		Pixel
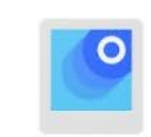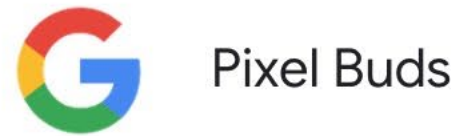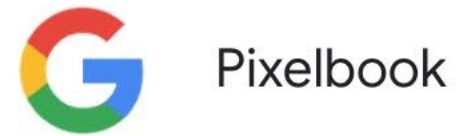
Pixel Buds	Pixelbook	Scholar	Search
Sheets	Sites	Slides	Snapseed
Stadia	Tilt Brush	Translate	Trusted Contacts
Voice	Waze	Wear OS by Google	YouTube
YouTube Kids	YouTube Music	YouTube TV	YouTube VR
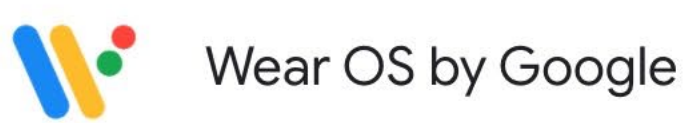
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AdMob	AdSense	Analytics	Android
Blogger	Business Messages	Chrome Enterprise	Chrome Remote Desktop
Data Studio	Google Ads	Google Assistant	Google Cloud
Google Digital Garage	Google Domains	Google Manufacturer Center	Google Maps Platform
Google Marketing Platform	Google Meet	Google Merchant Center	Google My Business
Google Podcasts Manager	Google Trends	Google Web Designer	Google Workspace
Google for Retail	Optimize	Search Console	Surveys
Tag Manager	Waze Local		

AdMob

Analytics

Android

Firebase

Flutter

Google Ads

Google Cloud

Google Maps Platform

Google Pay

Google Play

Interactive Media Ads

Search

TensorFlow

Web

YouTube

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DeepMind

- We joined forces with Google in 2014 to accelerate our work, while continuing to set our own research agenda.

  https://deepmind.com/about

X.Company

- In 2010, Google founders Larry Page and Sergey Brin decided to form a new division of the company to work on moonshots: far-out, sci-fi sounding technologies that could one day make the world a radically better place.
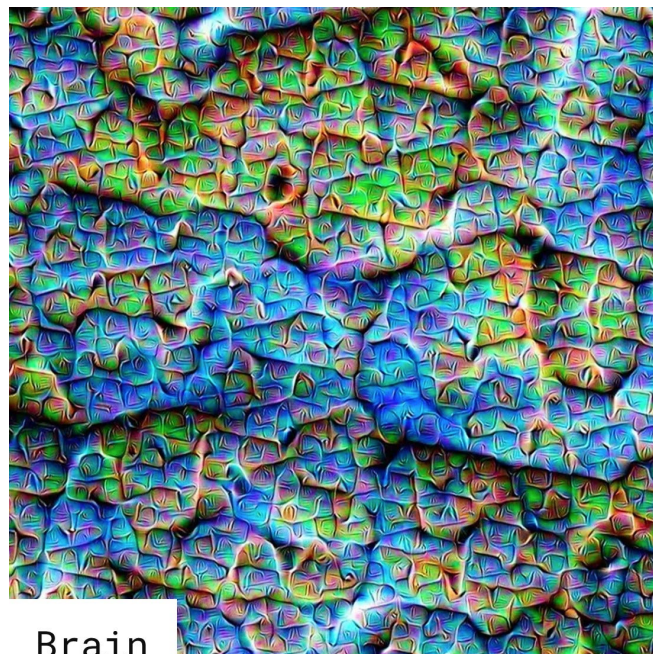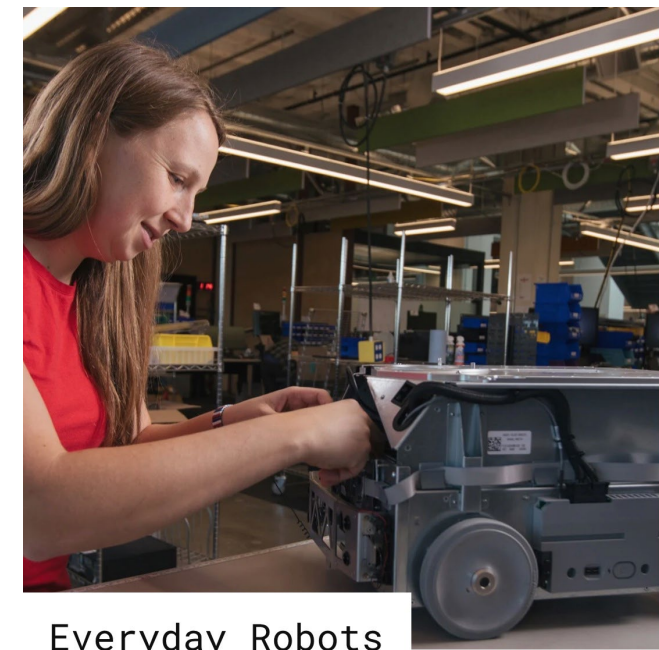

Brain

Glass Enterprise Edition

Waymo

Everyday Robots

Google is an Alphabet Company

- Alphabet (Google's parent company) owns 422 domains
  - "Alphabet is meant to be a cleaner, more accountable holding company, says Google Co-founder Larry Page. He'll act as the Alphabet CEO, while Sergey Brin acts as the president."

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New lawsuit: Why do Android phones mysteriously exchange 260MB a month with Google via cellular data when they're not even in use?

Ad giant sued after mobile allowances eaten by hidden transfers

Thomas Claburn in San Francisco   Sat 14 Nov 2020 **//** 00:09 UTC   SHARE

https://www.theregister.com/2020/11/14/google_android_data_allowance/

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- **"The HTML source code of major EU webpages shows that many companies still use Google Analytics or Facebook Connect one month after a major judgment by the Court of Justice of the European Union (CJEU) - despite both companies clearly falling under US surveillance laws, such as FISA 702."**

- **"Neither Facebook nor Google seem to have a legal basis for the data transfers."**

https://noyb.eu/en/101-complaints-eu-us-transfers-filed

EU strikes down key US data-sharing protocol, citing threat of mass surveillance

US companies can't be trusted with personal data, says top EU court

By James Vincent | Jul 16, 2020, 6:06am EDT

https://www.theverge.com/2020/7/16/21326795/eu-us-personal-data-transfer-privacy-shield-invalidated-sccs-upheld

"As the EU will not change its fundamental rights to please the NSA, the only way to overcome this clash is for the US to introduce solid privacy rights for all people — including foreigners."

Some Good Intents

- https://www.humanetech.com/

- https://solid.github.io/specification/

- Ethics:
    - https://developer.twitter.com/en/developer-terms/more-on-restricted-use-cases
    - https://www.w3.org/2001/tag/doc/ethical-web-principles/

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