Big Data and the Platform Economy: On Infrastructural Power

UN Expert Meeting
Panel: II. Data, including big data, innovation and technology

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Server Farming and Data Harvesting (Google)

1. Google Server Farm
   Mayes County, Oklahoma

2. Google Server Farm
   Council Bluffs, Iowa

https://www.google.com/about/datacenters/locations/
“The platform has emerged as a new business model, capable of extracting and controlling immense amounts of data, and with this shift we have seen the rise of large monopolistic firms.”

Platform Economy (Google / FARMWAVE) [1]

Applying AI, ML, and DL to Agriculture

What We Do
FARMWAVE is an app that connects people in agriculture with their farm, technology, and each other. It offers farmers a vast storehouse of crop knowledge, the power of artificial intelligence, and rapid problem-solving – in the palm of their hand.

FARMWAVE Components: Technology

Tech Trained from the Ground Up
FARMWAVE leverages key Google Cloud Platform technologies and our proprietary algorithms developed specifically for agriculture to power its decision-making capabilities. Building on a dynamic, well-supported, and growing ecosystem contributes to FARMWAVE’s stability, security, and scalability.

FARMWAVE: Leveraging Google Technologies

Putting it all together
We use Google Cloud Platform with Firebase for native app analytics, TensorFlow for machine learning, and gained early access to AutoML. We also use the Google Vision API to eliminate background objects as null classifiers.

Google Vision API

From picture to text
Using the Google Vision API, FARMWAVE image recognition technology helps farmers effortlessly translate visual information to usable text. These capabilities give farmers an easy way to identify their plots, eliminating manual transcription errors.
The Google Vision API has helped us tremendously in extracting information very quickly when going to the field. [...] We helped them [the farmers, FM] by recognising the pathogens and pests and we leverage everything in Google Cloud, where Farmwave lives.”

Craig Ganssle, CEO FARMWAVE
Platform Economy (Farmobile / Amazon Web Services)

“AWS is aggressive in its investment in serverless technologies [...] and has built a strong ecosystem of solution partners. AWS security and compliance standards are also key for us. When I looked to our future needs, migrating to building on AWS was our choice for growth.”

Chris Schibi, CTO Farmobile

Farmobile: https://www.farmobile.com/case-studies/aws/
“Furthermore, if as a farmer both the software running your seeder and the very seeds you plant are subject to IP protections, you no longer even meaningfully “own” the equipment you buy. Instead, you essentially license critical parts, which you thus cannot repair yourself […] Yet in order to actually receive the advantages and value promised by precision equipment, you [the farmer, FM] must simultaneously share exquisitely specific data about your farm operations—data your labor generated—for free.”

Issues and problems that need to be addressed:

- Increase of monopoly power in the digital sector (GAFAM)
- Privatisation of knowledge and resulting epistemic dependencies
- Inequal access (who has access to the infrastructure?) / unequal opportunities
- Privacy issues
- Ecological implications of the expansion of digital infrastructures
- Automation of physical and mental labor
- Algorithmic biases
- How to regulate digital infrastructures and monopoly power?
GAFAM‘s colonisation of infrastructures

Examples:
➢ Health
➢ Education
➢ Mobility
➢ Infrastructure of “smart cities”
➢ Agriculture (?)
GAFAM: Net Worth

- GAFAM’s Net Worth rose 37 percent in the first seven months this year
- Currently: about $6.3 trillion
  Apple’s current net worth: $2 trillion
- GDP of France $2.6 trillion
- GDP of Italy $2 trillion
Kranzberg‘s Law

“Technology is neither bad nor good, nor is it neutral.”
- Melvin Kranzberg, “Technology and History: Kranzberg‘s Laws”
Infrastructural Power and “Institutional Facts”

- **Infrastructural power (our definition):** a form of power that essentially circumvents or avoids concrete political deliberation or regulation, with the aim of establishing a new, universal standard or norm.

- **Institutional facts (Zuboff):** “New contested practices become firmly established as institutionalized facts, rapidly bolstered by growing ecosystems of stakeholders. (...) The incursion itself, once unthinkable, slowly worms its way into the ordinary. Worse still, it gradually comes to seem inevitable. New dependencies develop.”

Google, Apple, Facebook, and Amazon are expected to make together almost $27bn more in pandemic profits over and above already historic profits in previous years (source: Oxfam).

Global spending on cloud computing rose 33 percent to more than $30 billion in the second quarter 2020 (source: Synergy Research).
“The ultimate objective of internet companies (...) is to provide the infrastructure through which humans encounter the world. (...) When the mind wants to know something, it will go to Google; when it wants to communicate with someone, it will turn to Facebook. When we want to be somewhere else, we click on Uber, and when we simply want something; Amazon will make it arrive.”

Preliminary Takeaways

➢ We need a critical assessment of Big Tech’s narratives of empowerment, democratization and decentralization.

➢ Focus on new forms of hierarchies, power asymmetries and dependencies created through data infrastructures; think of alternative infrastructures instead (i.e. data commons; open source, data sovereignty etc.)
Thank you for your time and attention.

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