THE ROLE OF CITIES IN DEMOCRATIZING AI AND DATA OWNERSHIP: LEARNING FROM BARCELONA
THE CONTEXT: THE ROBOT ECONOMY

THE FOURTH INDUSTRIAL REVOLUTION

18th Century

Industry 1.0
Mechanical production. Equipment powered by steam and water

19th Century

Industry 2.0
Mass production assembly lines requiring labor and electrical energy

20th Century

Industry 3.0
Automated production using electronics and IT

Today

Industry 4.0
Intelligent production incorporated with IoT, cloud technology and big data
The ‘sharing economy’ undermines workers’ rights

By Evgeny Morozov
Since January 2017 US and Chinese tech firms have grown by an amount greater than the GDP of Norway ($950BL). Giant investment by sovereign funds & new tech Funds: $100BL Vision Fund (SoftBank+ Saudi Arabia+ Apple);

This growth is coupled with low taxation & fiscal strategies to take advantage of fiscal competition internationally ($1trillion offshore). Leading to an increase in corporate profit, boost of stock prices and wealth inequality.
DATA IS THE RAW MATERIAL OF THE DIGITAL ECONOMY

Data have become the most valuable commodity in the world. Companies in every industry are counting on AI to drive growth over the next several years. Machine learning will increase their return on investment by anywhere from 10 to 30 per cent.

“At large [tech] companies, we often launch products not for the revenue but for the data .. and we monetize the data through a different product” Andrew Ng

“Who owns the data will decide in the end whether democracy, a participatory social model and economic prosperity can be combined” Angela Merkel
SURVEILLANCE
BLACK BOX SOCIETY?

The most important technology of our era is **AI**, particularly **machine learning/deep learning** (Global AI funding more than tripled between 2016 and 2017, to reach over €11BL; China’s 2030 AI policy to become world’s leader; EC €20bn in AI research- AI Labs ELLIS).

**WHAT ARE THE SOCIAL, ETHICAL & ECONOMIC IMPLICATIONS OF AI?**
WHAT CAN GO WRONG?

The Data That Turned the World Upside Down
DEMOCRATIZING AI AND DATA OWNERSHIP?

The battle for digital supremacy

The Economist
WHAT’S THE ROLE OF CITIES? CREATING PUBLIC VALUE
SMART, EQUITABLE, DEMOCRATIC CITIES

1. TOP DOWN SMART CITIES
City planners and corporations use IT infrastructure to optimise the flows of people and goods and deliver public services more efficiently

Barcelona
Has embedded sensors in the city’s infrastructure to monitor and manage water use

IBM
Has designed a centralised intelligent Operations Centre to coordinate and manage all of a city’s services

PlanIT’s Urban Operating System
Is marketed as a way to manage the entire urban landscape

2. CONNECTING TOP AND BOTTOM
People use open data released by local authorities and companies to create services, and local authorities collect data from citizens to improve their services

Frumystreet
Allows citizens to map local issues from potholes to confusing signage and bring it to the attention of local authorities

Streetbump
An app that identifies potholes by recording “bump” data, providing the city with real-time data on road conditions

Betri Reykjavik
A platform which crowdsources opinions on city legislation, with the most popular ideas debated by the council

3. BOTTOM UP SMART CITIES
Citizens generate and share data to improve the way their city works, they act collectively and connect with each other to share resources

Smart Citizen Kit
The Smart Citizen project uses low-cost sensors and a web platform to enable citizens to capture, share and make sense of environmental data about their city

Changebyus
A place for citizens to put ideas into action to make their city a better place to live

Blindsquare
Uses crowdsourced information and GPS to help blind people navigate the city

Peerby
Promotes collaborative consumption by allowing neighbours to share or rent their possessions
The long read

Is this the world’s most radical mayor?

When Ada Colau was elected mayor of Barcelona, she became a figurehead of the new leftwing politics sweeping Spain. The question she now faces is a vital one for the left across Europe – can she really put her ideas into practice?
MISSION-ORIENTED INNOVATION
DATA & AI FOR CITIZENS’ WELL-BEING

AFFORDABLE HOUSING, HEALTH CARE, SUSTAINABLE MOBILITY, ENERGY TRANSITION, GREEN PUBLIC SPACES - TARGET CLIMATE CHANGE AND IMPROVE AIR QUALITY

Starts from citizens needs, bottom-up approach. Tackle big societal long term challenges.
COLLECTIVE INTELLIGENCE FOR DEMOCRACY

Decidim.Barcelona is the **Barcelona’s participatory democracy platform**: open source, auditable, collaborative, trustable, common.

It hosts participatory processes, government strategic planning, citizen initiatives, large scale deliberation, participatory budget...

**Online + offline hybrid**

Propose, meet, deliberate, decide, monitor: Join democracy
OPEN DATA FOR TRANSPARENCY-ANTI CORRUPTION

Bústia Ètica i de Bon Govern
Oficina per a la Transparència i les Bones Pràctiques

Heu detectat una mala pràctica de l'Ajuntament de Barcelona i poteu aportar proves d'aquesta conducta?

Utilitzant l'aplicació, que garanteix la confidencialitat, podeu fer que s'investiguï el cas i l'acțiui per millorar la integritat del sector públic.

Podreu escollir una comunicació totalment anònima.

Podreu fer el seguiment de la comunicació s'hi va d'un canal segur i conversar amb l'òrgan gestor de la bústia, independent en l'exercici de les seves funcions.

Revenue and Expenditure at Barcelona City Council

Revenue
- Property tax (IBI)
- Other own local taxes (capital gains, economic activity tax, road tax and construction tax)
- Transferred taxes (income tax, VAT and special taxes)
- Municipal and public sector changes and other revenue
- Current transfers from Spanish central government
- Current transfers from regional government, local authorities and others
- Equity returns
- Capital returns
- Other revenue

Expenditure
- Security and tax mobility
- Housing and urban planning
- Urban services and environment
- Social services and health
- Education
- Culture
- Economy, productivity and employment
- Public transport
- Government bonds
- Transfers to other public authorities
- General services and administration
- Public debt

PICK A YEAR
- 2014
- 2015
- 2017 (modified v1 notes)
- 2018
ETHICAL DIGITAL STANDARDS FOR CITIES: BCN POLICY TOOLKIT

Services standard
A set of criteria for the creation and management of digital services for the general public, in an agile, open way.

Code of practice
A set of directives for implementing technological projects using open standards and ethical data management.

Agile method
Principles and practices for the agile transformation of Barcelona City Council in terms of technology and innovation.

Technological sovereignty
The practical implementation of technological sovereignty for participants and interested parties in Barcelona City.

ICT purchasing
Directives for defining the new model in relation to technology suppliers, based on the Code of Technological Practices.

Innovative purchasing
A basic tool for obtaining solutions that are much more tailored to the real needs of society and for helping companies to be more competitive.

USE OF FREE SOFTWARE, OPEN STANDARDS, OPEN SECURE HARDWARE & AI CHIPS
ETHICAL, RESPONSIBLE DATA & AI STRATEGY

A NEW CITY-LEVEL DATA STRATEGY THAT HAS TRANSPARENCY, PRIVACY, SECURITY AND ETHICAL USE OF DATA FOR INNOVATION AT ITS CORE

- Data sovereignty, data portability, data trusts
- Privacy & security by design
- Data Infrastructure at City-Scale (open standards; open APIs)
- Accountable technology (algorithmic transparency)

ALGORITHMIC IMPACT ASSESSMENT: NORMS AND PRACTICAL FRAMEWORK TO ASSESS AUTOMATED DECISION SYSTEMS AND ENSURE ACCOUNTABILITY. BCN-NYC COLLABORATION.
CITIES AS CUSTODIANS OF NEW DIGITAL RIGHTS

DECENTRALISED CITIZENS OWNED DATA ECOSYSTEM

Preserving Data sovereignty of citizens
decodeproject.eu
Why DECODE?

Current paradigm

- Data is a **fictitious commodity**, that can be sold and traded in markets
- Data handling & monetization is **opaque**
- Even if there is regulation, there is no possible enforcement
- We produce the data, *they* own it
- Benefits of data *sharing* are privatized

Intended paradigm

- Data is a **common resource & infrastructure** where to build upon
- Data handling and usage is **transparent & privacy-friendly**
- Data is shared according to rules set by **common governance**
- Shared benefits of data sharing
- New political, economic, and legal regime that recognize **social rights to data**
Challenge: Enabling the Data Commons

Can we regain control of our data? Citizens can decide who to share it with, under which rules, when and for what purpose?

- Attribute Based Cryptography
- Distributed Ledger
- Privacy-focused smart contracts language

Data rights & entitlements

In short: Real data sovereignty
AI for democracy
BCN data-driven participatory democracy

Decidim Barcelona
decidim.barcelona

- Open source platform for participatory democracy +30k users
- Accountability on signing petitions & online voting, yet privacy on political beliefs
- Detection of city problems
- Provide tools to users with similar interests to interact
- Participatory budgeting
AI for environmental action
BCN: IoT/citizen sensing

smartcitizen.me/makingsense

- IoT data might be privacy-sensitive
- Crowd sensing of a problem with IoT in a community
- Users can decide to whom and under which conditions they share data

Communal rights to data
AI for citizens engagement
BCN Now: AI-like virtual assistant for citizens

Visualize personalized & relevant citizen interests

Merging public data + data from the commons + personal interests to find/be found by similar profiles while ensuring privacy
AI for sustainable tourism
City digital registry: Fair home rental

A verified, anonymous short-stay rental register. By only revealing the relevant attributes: (1) I live in the house that I let (2) I have not rented it out for more than 60 days.

Return benefits to community to mitigate effects of tourism

Amsterdam, other EU cities, urge Brussels to take action on Airbnb data
DECODE implementation strategy

DATA COMMONS

BCN Data Teams

Use cases

Insight

BCN Data Analytics Office

Citizens/Business/Academia/communities
JOBS, SKILLS & EMPOWERMENT IN THE AGE OF AI & AUTOMATION

STEAM /DIGITAL MANUFACTURING FOR YOUTH INCLUSION, GENDER EMPOWERMENT & EMPLOYMENT
AI FOR GOOD PARTNERSHIPS AND ECOSYSTEM
WE MUST SHAPE A PEOPLE-CENTRIC AI FRAMEWORK: EUROPE CAN LEAD THE WAY

- Build a human-centric, ethical policy and regulatory framework: Make GDPR a Global Standard
- Mandate data and algorithmic accountability, with practical frameworks for public bodies.
- New Rules against market dominance of tech platform giants (Fair competition/antitrust; digital tax, trade regulation)
- Fund decentralised, privacy-enhancing, rights preserving digital infrastructures to ensure data sovereignty
- Strong AI development: the new strategic industries

We need ambitious & structural interventions that will tackle the question of data ownership & who is going to own AI services built with that data