



An overview of present and
future MPC applications

Thijs Veugen



First trend: increasing value creation from data

Onderzoek McKinsey:
Economische en
maatschappelijke kansen van AI
voor Nederland



NL AI Coalitie

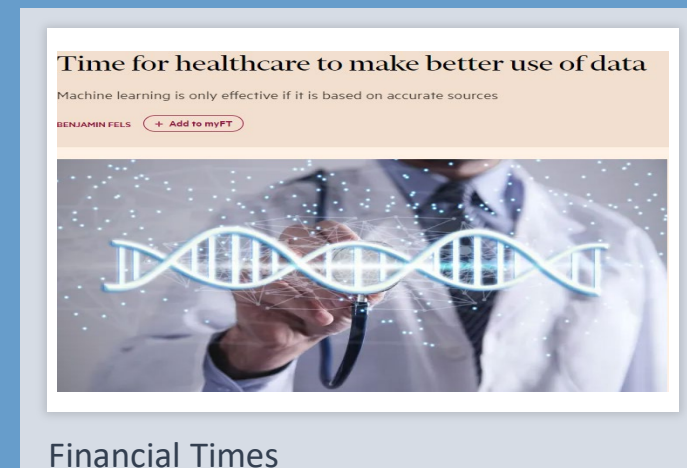
Enhancing Access to
and Sharing of Data
RECONCILING RISKS AND BENEFITS
FOR DATA RE-USE ACROSS SOCIETIES



OECD



Combining of data is essential



Second trend: increased interest for privacy and confidentiality



MPC

Opportunities:

- ▶ Information sharing
- ▶ Collaboration
- ▶ New insights



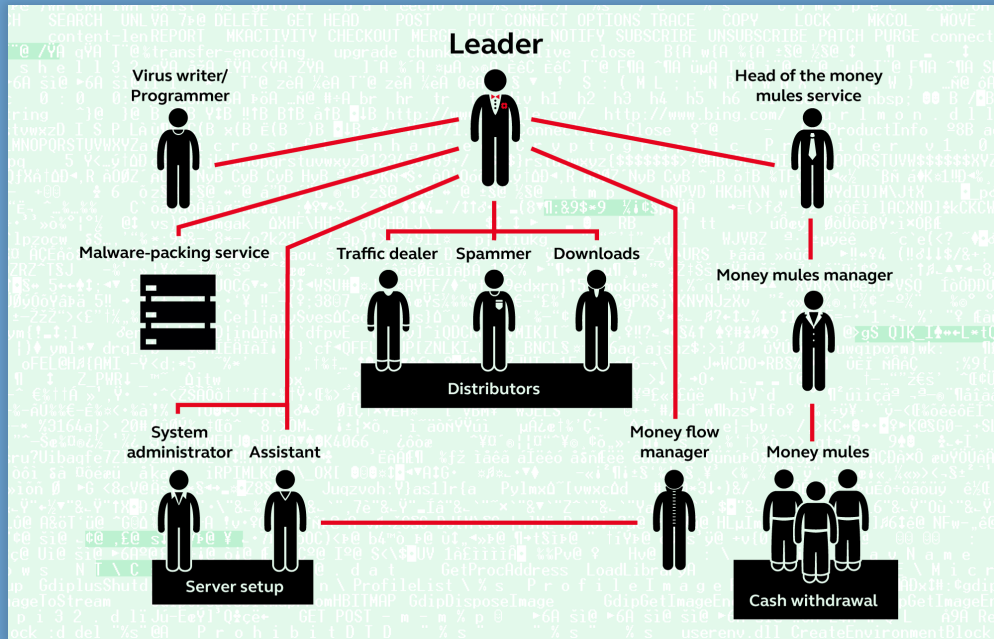
Challenges:

- ▶ Privacy
- ▶ Confidentiality



Case 1: Fight against financial crime





Fraud and money laundering:

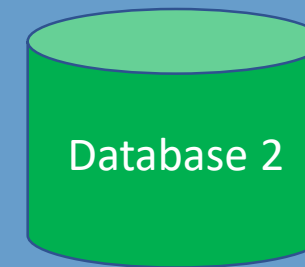
- Growing (16 billion €)
- Hard to detect (<1% success)
- Legal obligation to detect
- Large costs



Case 2: Secure set intersection



ID	attribute	ID	attribute
1		2	
3		3	
7		4	
...		...	



Find the overlapping items



Examples:

- SVB (pension) and UWV (income)
- Police (weapon permit) and CIZ (compulsory mental healthcare)
- FCInet: financial crime suspects across borders
- Google: search results and sale
- Etc.

NOS NIEUWS • BINNENLAND • ECONOMIE • 13-11-2019, 11:23
• AANGEPAST 13-11-2019, 13:57

Veel ouderen onder bestaansminimum omdat ze aanvulling AOW niet krijgen



Future challenges:

- **Distributed machine learning in health care**
- **MPC and PETS, e.g. differential privacy**
- **Exploitation**

