

INTERNET PRIVACY AND EU DATA PROTECTION

Seminar VI.

Data Protection and Datafication, Big Data
and Internet-of-Things, Artificial Intelligence,
Machine Learning (etc.)

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roadmap

- Quick recap of DP-law, and something about profiling
- What is IoT, datafication & big data anyhow?
- How IoT & Datafication & Big Data (etc.) challenge DP Law



A. QUICK RECAP OF DP LAW

personal data & special data



transparency



consent or other processing ground



data minimisation



purpose specification and limitation



profiling



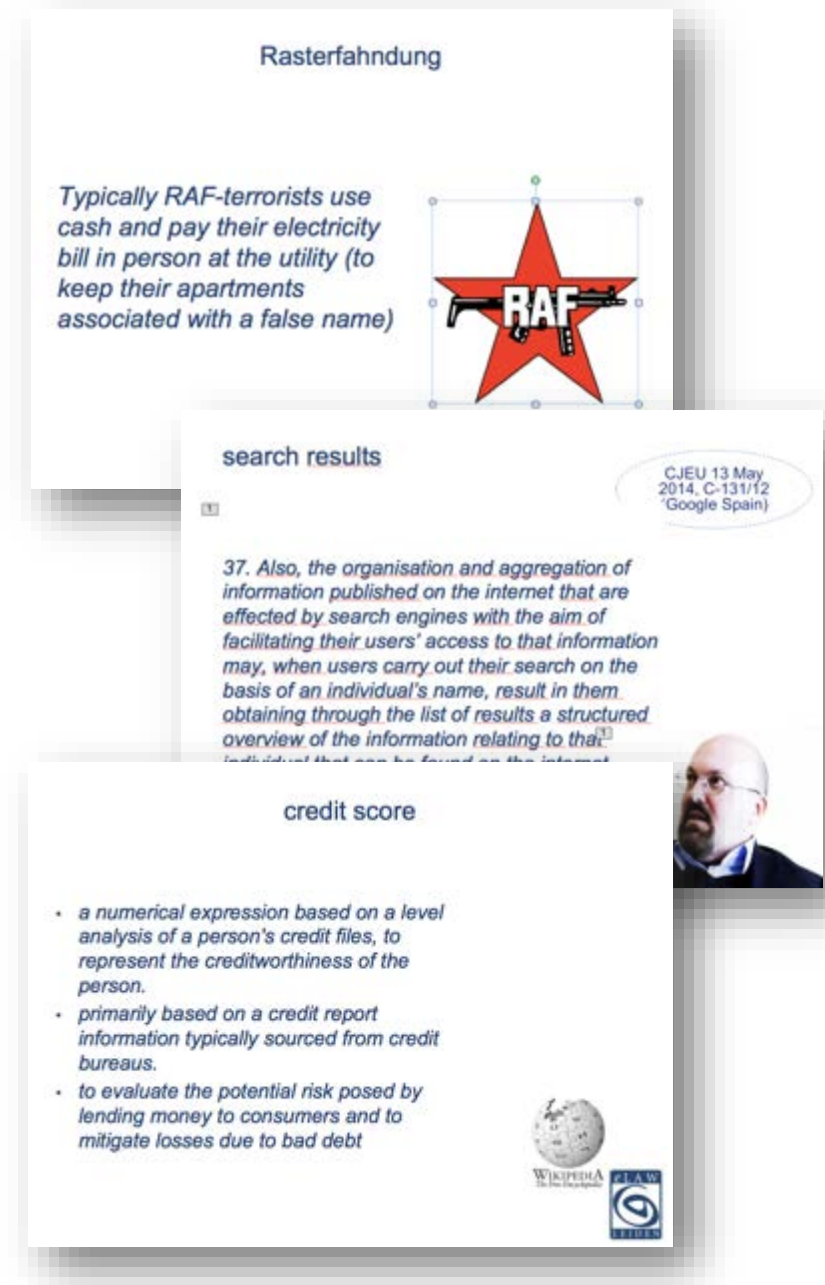
etc.

profiling

automated processing of personal data
consisting of the use of personal data to *evaluate*
certain personal aspects relating to a natural
person

in particular to *analyse* or *predict* aspects
concerning that natural person's

- performance at work
- economic situation
- health
- personal preferences
- interests
- reliability
- behaviour
- location or movements



rules for profiling

a right

- not to be subject to a decision based **solely** on automated processing, including profiling,
- which produces **legal effects** concerning him or her
- or similarly **significantly affects** him or her

exceptions

- (a) necessary for entering into, or performance of, a **contract** between the data subject and a data controller
- (b) authorised by Union or Member State **law** to which the controller is subject and which also lays down suitable measures to safeguard the data subject's rights and freedoms and legitimate interests
- (c) based on the data subject's explicit **consent**.

Rasterfahndung

Typically RAF-terrorists use cash and pay their electricity bill in person at the utility (to keep their apartments associated with a false name)



credit score

- *a numerical expression based on a level analysis of a person's credit files, to represent the creditworthiness of the person.*
- *primarily based on a credit report information typically sourced from credit bureaus.*
- *to evaluate the potential risk posed by lending money to consumers and to mitigate losses due to bad debt*



‘online profiling or behavioral advertizing’

- *advertising based on observation of behavior of individuals over time*
- *seeks to study characteristics of this behaviour through actions*
- *to develop a specific profile and provide these individuals with advertisements tailored to their interests*

ethnic profiling

- *stopping or detaining the driver of a vehicle based on the determination that a person of that race, ethnicity, or national origin is unlikely to own or possess that specific make or model of vehicle*
- *stopping or detaining an individual based on the determination that a person of that race, ethnicity, or national origin does not belong in a specific part of town or a specific place*

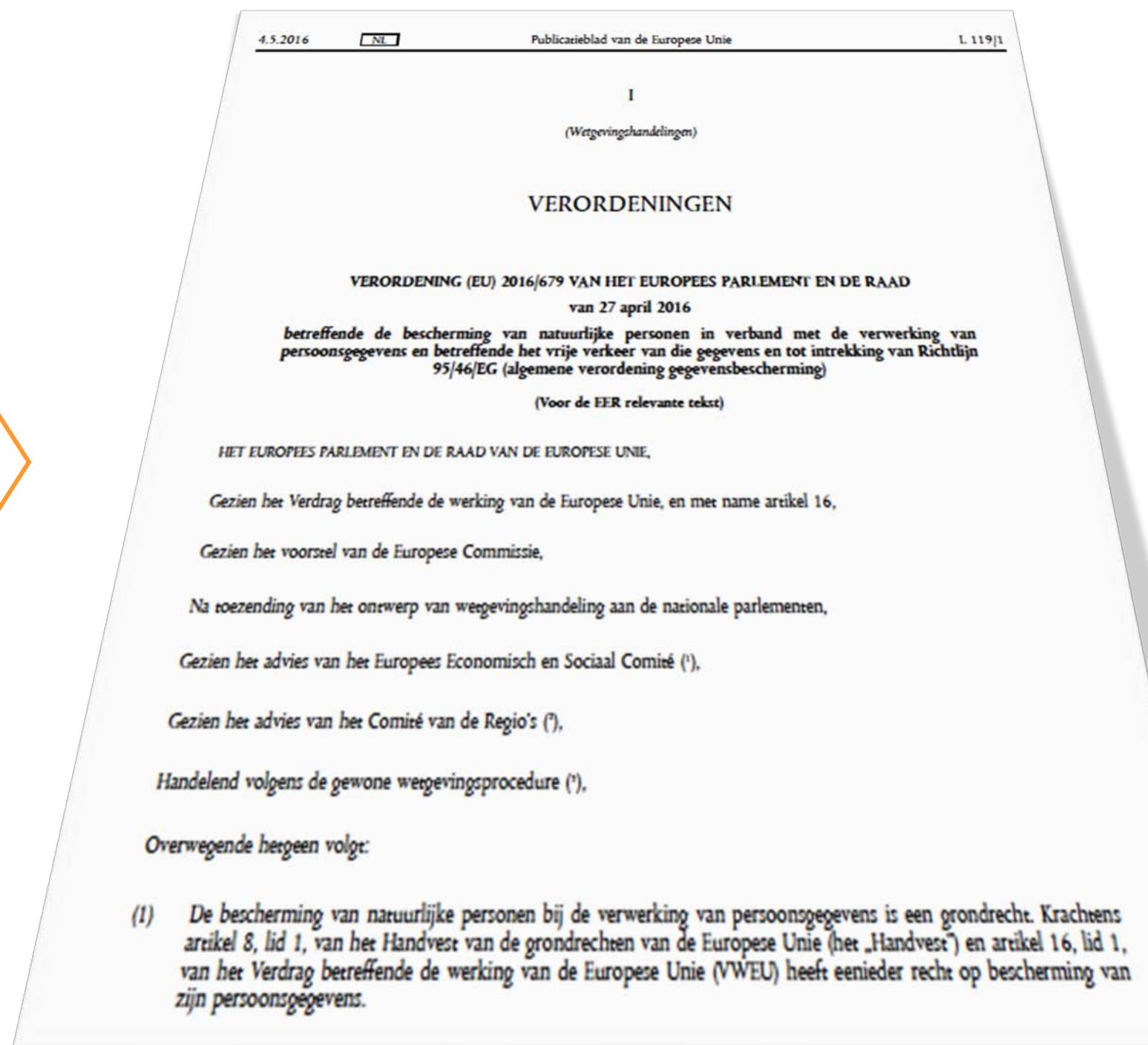
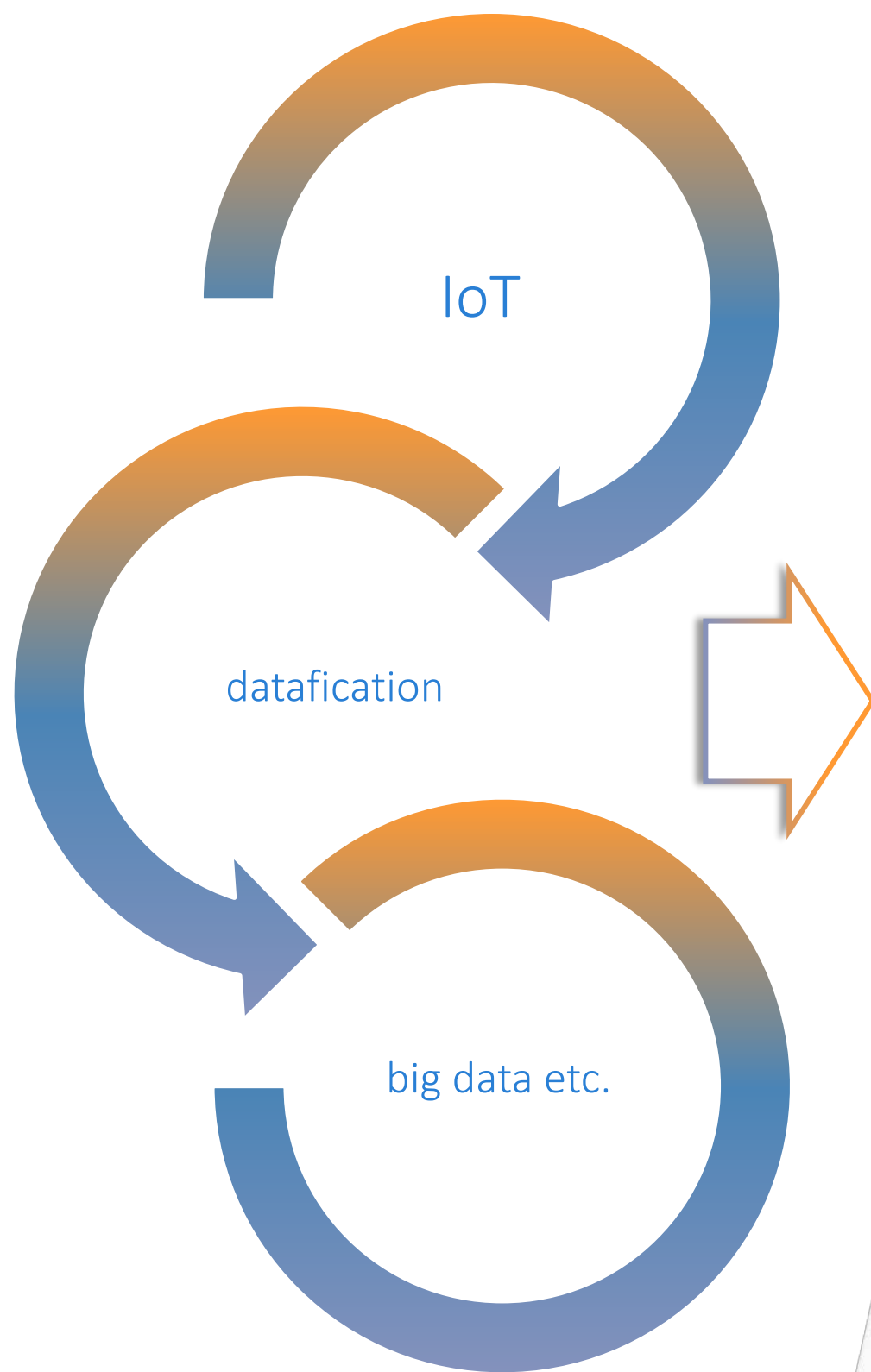
search results

CJEU 13 May 2014,
C-131/12 (Google
Spain)

37. Also, the organisation and aggregation of information published on the internet that are effected by search engines with the aim of facilitating their users' access to that information may, when users carry out their search on the basis of an individual's name, result in them obtaining through the list of results a structured overview of the information relating to that individual that can be found on the internet enabling them to establish a more or less detailed profile of the data subject



B. 'INTERNET OF THINGS'..? DATAFICATION? AND
BIG DATA? (ETC..?)





The internet of things is a vision of **ubiquitous connectivity**, driven by one basic idea: screens are not the only gateway to the ultimate network of networks.

With **sensors, code and infrastructure**, any object – from a car, to a cat, to a barcode - can become networked. But the question we need to ask is: should they be? **And, if so, how?**



It's hard to see what this [ie IoT] would look like, exactly. But imagining it shouldn't just be delegated to tech companies and opportunists riding the hype cycle.

Artists, designers, philosophers, lawyers, psychologists and social workers must be just as involved as engineers and internet users in shaping our collective digital future

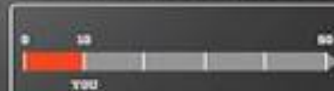
every breath you take
every move you make
every bond you break
every step you take...

datafication [*dey•tuh•fi•key•shuh•n*]

a modern technological trend turning many aspects of our life into computerized data and transforming this information into new forms of value [Mayer-Schönberger & Cukier 2013]



TOTO INTELLIGENT YOU-RINAL — POWERED BY GOOGLE STREAMSENSE ANALYTICS

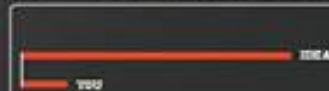


YOU AREN'T GETTING
ENOUGH VITAMIN D.

ONE CAN OF GENENTECH
ENHANCED SARDINE SHAKE
HAS 270% OF USRDA.

WHY IS THIS RECOMMENDED?

VITAMIN D LEVEL: 10 PC/ML



YOU ARE DANGEROUSLY
DEHYDRATED.

RESTORE YOUR LIQUIDITY
WITH POLAND SPRING 100%
NATURAL BOTTLED WATER.

WHY IS THIS RECOMMENDED?

SPECIFIC SMUTTY: 1.04



ARE YOU SATISFIED
WITH LEXAPRO?

ASK YOUR DOCTOR
ABOUT CYMBALTA FOR
YOUR DEPRESSION.

WHY IS THIS RECOMMENDED?

ACEYLOPAM DETECTED: 34 NG/ML

BIOSENSOR ARRAY: ONLINE



BOLIVIAN: NOT DETECTED
LEUCINE-RICH ALPHA-2-GLOBULIN: NEGATIVE
PROTEIN LEVEL: LOW
LEUCINE ESTERASE: NOT DETECTED
CANNABINOIDS: DETECTED
METHAMPHETAMINE & METHYL SULFIDE: PRESENT
BENZODIAZEPINE: DETECTED

ISOBUTYLENE ACID: DETECTED
HEPATIC DYSFUNCTION: NEGATIVE
BLADDER CANCER: NEGATIVE
APPENDICITIS: NEGATIVE
LIVER FUNCTION: SUBOPTIMAL
KIDNEY FUNCTION: NORMAL
BODY TEMPERATURE: ABNORMALLY LOW

NEXT SCHEDULED AUTOCLEAN: 7:40PM 08.10.2019

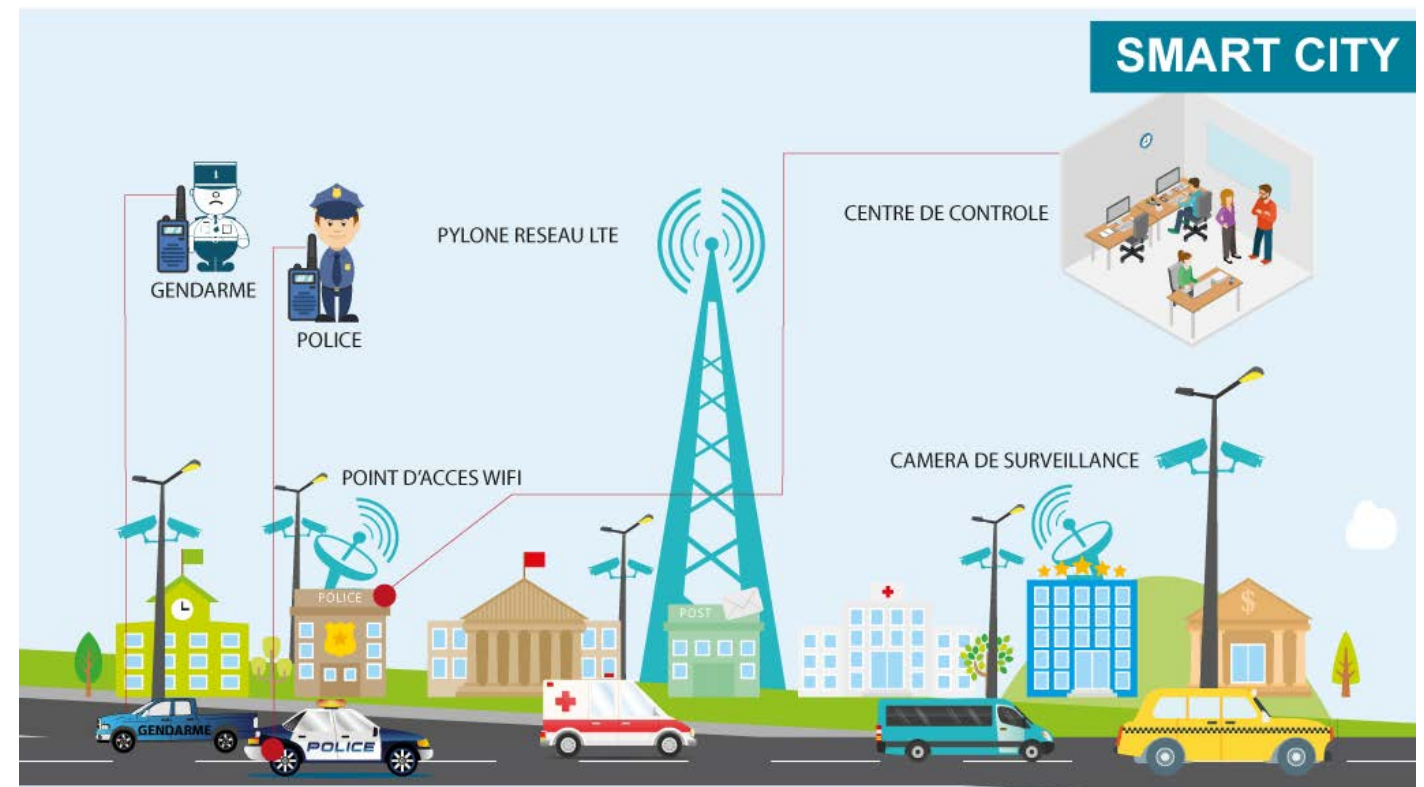


ALL BENNIGANS EMPLOYEES
MUST PERFORM COLD PLASMA
STERILIZATION OF HANDS
BEFORE RETURNING TO WORK.



HIT TARGET TO OPT OUT
OF PERSONALIZED ADS

SMART CITY



SINGAPORE. 'Smart lamp posts' in Singapore won't shine light into people's lives

An ambitious project is underway to equip lamp posts in Singapore with various capabilities to improve urban planning - serving to be more than just a light source. For example, environmental sensors could potentially be added to monitor rainfall, humidity and temperature, and noise sensors to detect unusually loud sounds, such as a person screaming or a car crash.

With video sensors, it would be possible to incorporate facial recognition systems. Navigational beacons could also be mounted to direct autonomous vehicles while speed-trap sensors could be used to track speeding bicycles or personal mobility devices.

“The whole point of the sensor platform is to look at improving services, look at *how to run the city and operate the city better* and how to plan the city better. We have no plans to do moral policing or things like that.”

“Admittedly there will be a very tiny sliver of cases, when you’re *tracking a person of interest*, criminal on the run, and you’re going to be using all this infrastructure to monitor those and track them. But that’s going on already, there’s no surprise and there’s high public acceptance of that.”

Instead, the professor warned that cybersecurity threats such as *hacking and data leaks* could be bigger dangers.

Amstelveen, 07 February 2017

Test at Schiphol: boarding quickly and easily using facial recognition

Summary

Schiphol Airport has started a test with KLM involving “biometric boarding” – one-off boarding without showing your boarding pass or passport. Passengers board the aircraft quickly and easily using a special door that recognises passengers by their faces.

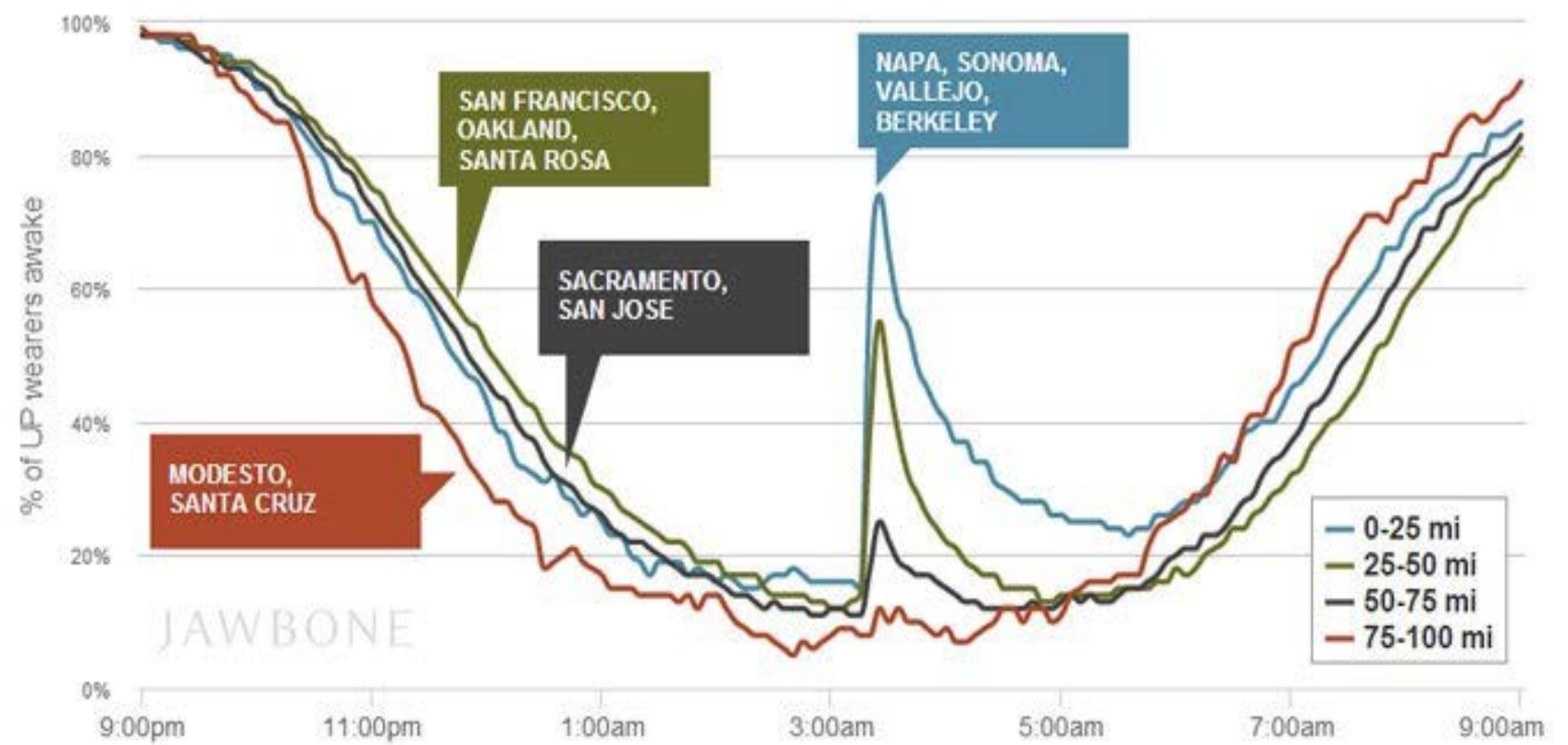


With the help of this test, Schiphol and KLM want to study the technology of facial recognition – the system’s speed, reliability, and user-friendliness. They will also examine the boarding process and the passenger experience. The ultimate aim is to make the boarding process as quick and easy as possible for our passengers. The test period will last a minimum of three months.

It will take place at a specially selected gate at the airport. Boarding with facial recognition will require passengers to register first. In the waiting area near the gate, there will be a special registration kiosk. KLM staff will assist the passengers.

Registration involves scanning the passport, the boarding pass, and the passenger’s face. In the interest of privacy, the data will be used only for the test. Following boarding, all personal data will be erased. All data storage in the registration kiosk is erased after ten hours.





*Big Data is a generalized, **imprecise term** that refers to the use of large data sets in data-science and **predictive analytics** [Mayer-Schönberger & Cukier 2013]*

*Big data can be used to identify more general trends and correlations but it can also be processed in order to **directly affect individuals** [WP29 2013]*

*high-**volume**, high-**velocity** and high-**variety** information assets that demand cost-effective, innovative forms of information processing for enhanced insight and **decision making** [www.gartner.com/it-glossary/big-data]*

*unprecedented computational power and sophistication make possible **unexpected discoveries**, innovations, and advancements in our quality of life [Whitehouse 2014]*

artificial intelligence or AI – the analysis of data to model some aspect of the world. Inferences from these models are then used to predict and anticipate possible future events [UK Government Office for Science 9 November 2016]

giving computers behaviours which would be thought intelligent in human beings [www.aisb.org.uk/public-engagement/what-is-ai]

machine learning – the set of techniques and tools that allow computers to ‘think’ by creating mathematical algorithms based on accumulated data [https://iq.intel.com/artificial-intelligence-and-machine-learning/]

vehicles upon the highways, we should not overlook the fact that the driving of a horseless carriage calls for a larger amount of attention, if not skill; upon the part of the driver, than is necessary in regard to horse-drawn conveyances. for he has not the advantage of the intelligence of the horse in shaping his path, and it is consequently incumbent upon him to be ever watchful of the course his vehicle is taking."







TARGET



C. *CHALLENGES*

distinctive aspects of big data analytics

- use of algorithms  *profiling and automated decision-making (art. 22 GDPR)*
- opacity of the processing  *transparency (art. 12-14 GDPR)*
- tendency to collect 'all the data'  *data minimization (art. 5.1 GDPR)*
- repurposing of data, and  *purpose limitation (art. 5.1b GDPR)*
- use of new types of data

«function creep»

(in British) *noun* the gradual widening of the use of a technology or system beyond the purpose for which it was originally intended, *esp.* when this leads to potential invasion of privacy

for instance CCTV for safety at school & kissing girls...

for instance pizzadelivery & health insurance

for instance test of learning capabilities and problem families

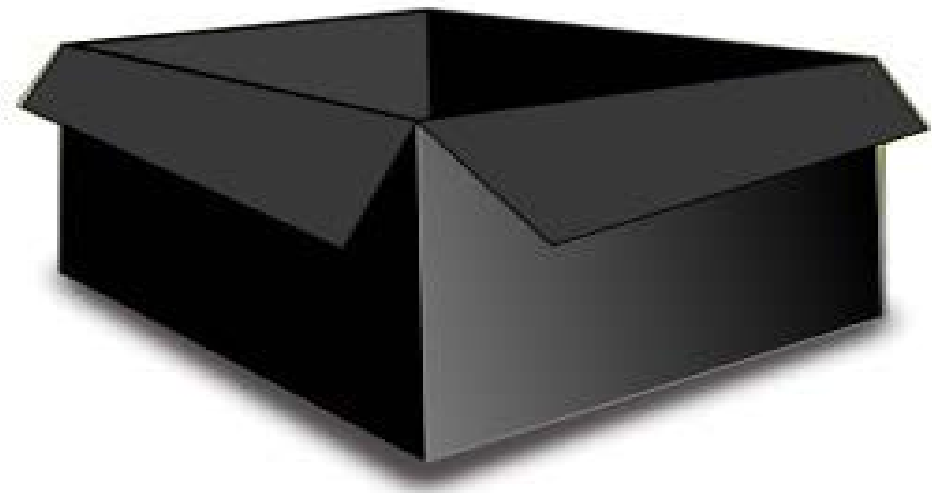
for instance public transport card & distribution of cost & security

for instance facial recognition & shorten waiting time & surveillance

etcetera...



correlation \neq causation



in a big-data age most innovative secondary uses [of data] haven't been imagined when the data is first collected. How can companies provide notice for a purpose that has yet to exist? How can individuals give informed consent to an unknown...?

[Mayer-Schönberger & Cukier
2013]

free, specific, informed and unambiguous 'opt-in' consent would almost always be required, otherwise further use cannot be considered compatible

[WP29 2013]

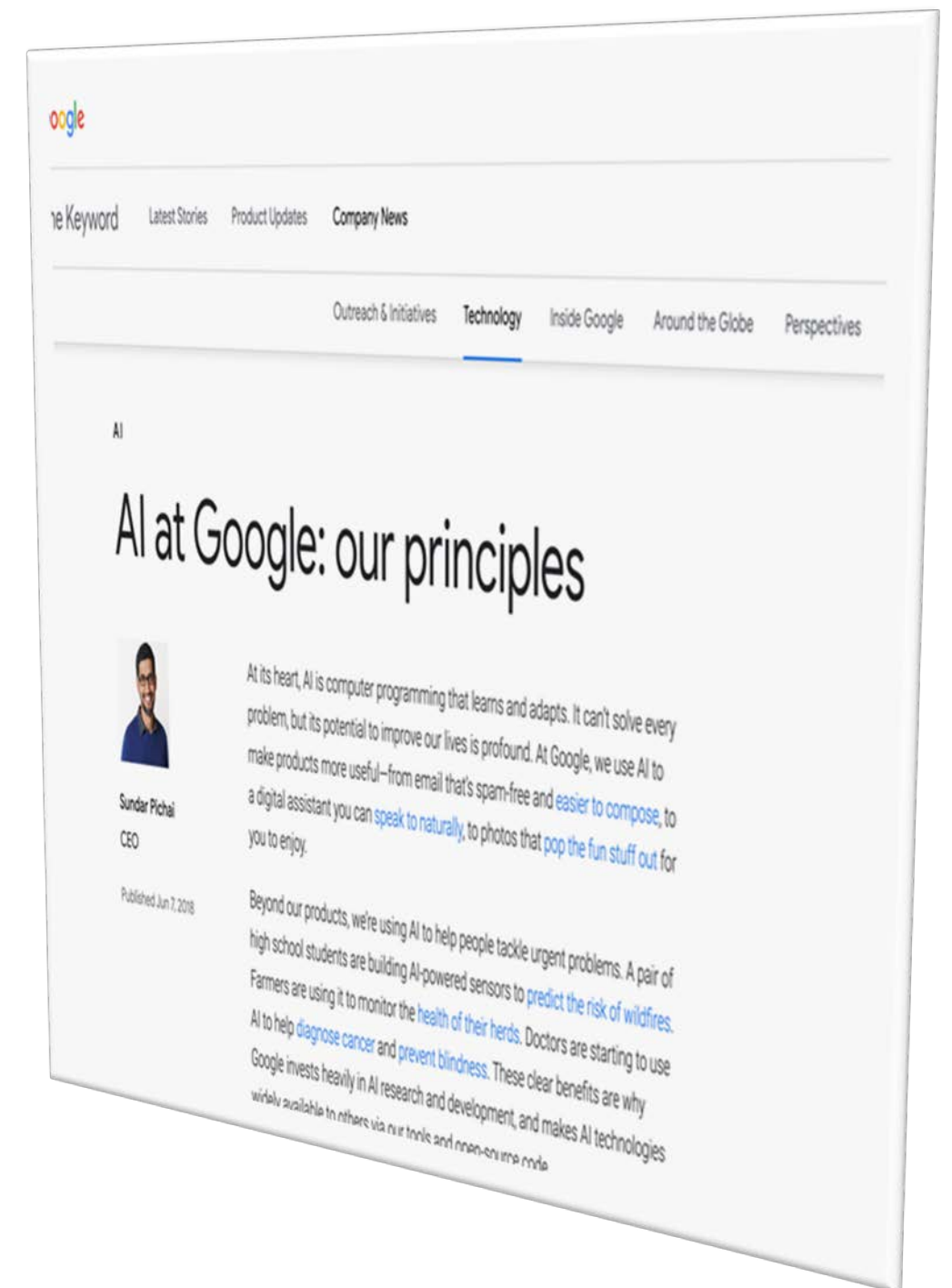
AI-principles

human centric – deploy AI only if there is a clear benefit for people and society
| *no unfair bias*

human control – our processes will remain within human control | *no black box*

human accountability – we will remain accountable | *no blaming the algorithm*

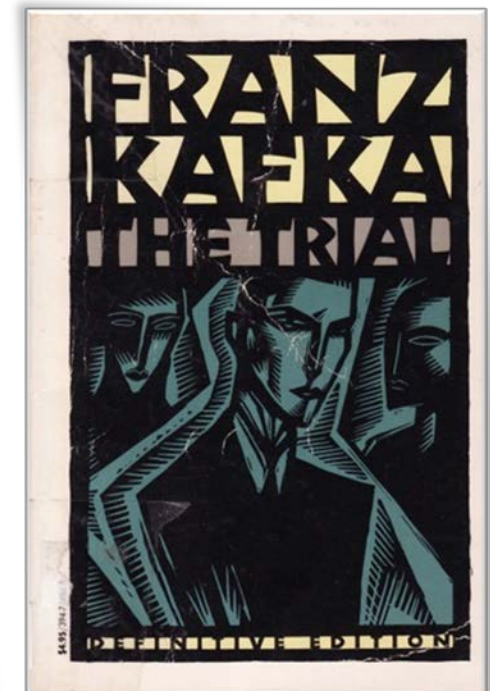
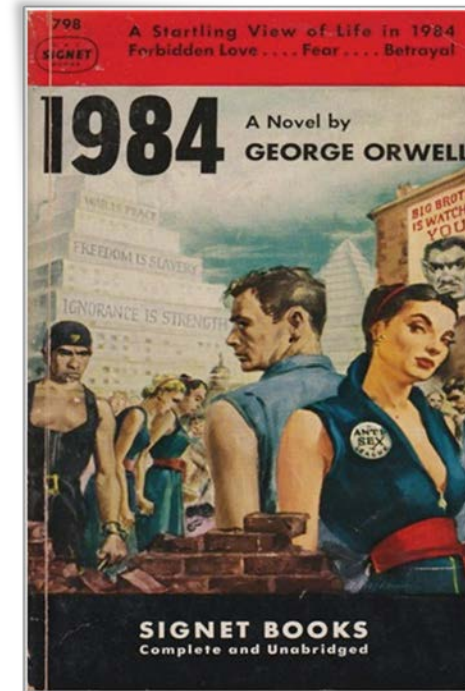
human decision making – transparency about decisions and underlying reasoning | *review and appeal*



AI Principles

- human agency and oversight
- technical robustness and safety
- privacy and data governance
- transparency
- diversity, non-discrimination and fairness
- societal and environmental well-being
- accountability





*the lifecycle of
software objects*

*the evolution of
human science*

