joe
@mutablejoe

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He's making a list
He's checking it twice
He's gonna find out who's naughty or nice
Santa Claus is in contravention of article 4 of the General Data Protection Regulation (EU) 2016/679

9:39 AM - 20 May 2018

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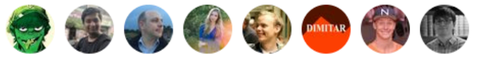


The Seven GDPR Sins of Personal-Data Processing Systems

Supreeth Shastri, Melissa Wasserman, Vijay Chidambaram

General Data Protection Regulation (GDPR)

May 25, 2018

Adopted after 2 years of public debate.
All but 2 EU countries have legislated.

Fundamental right

Grants all European people a right to
protection and privacy of personal data

Personal data

Any information relating to a natural person;
Broad in scope unlike FERPA, HIPAA

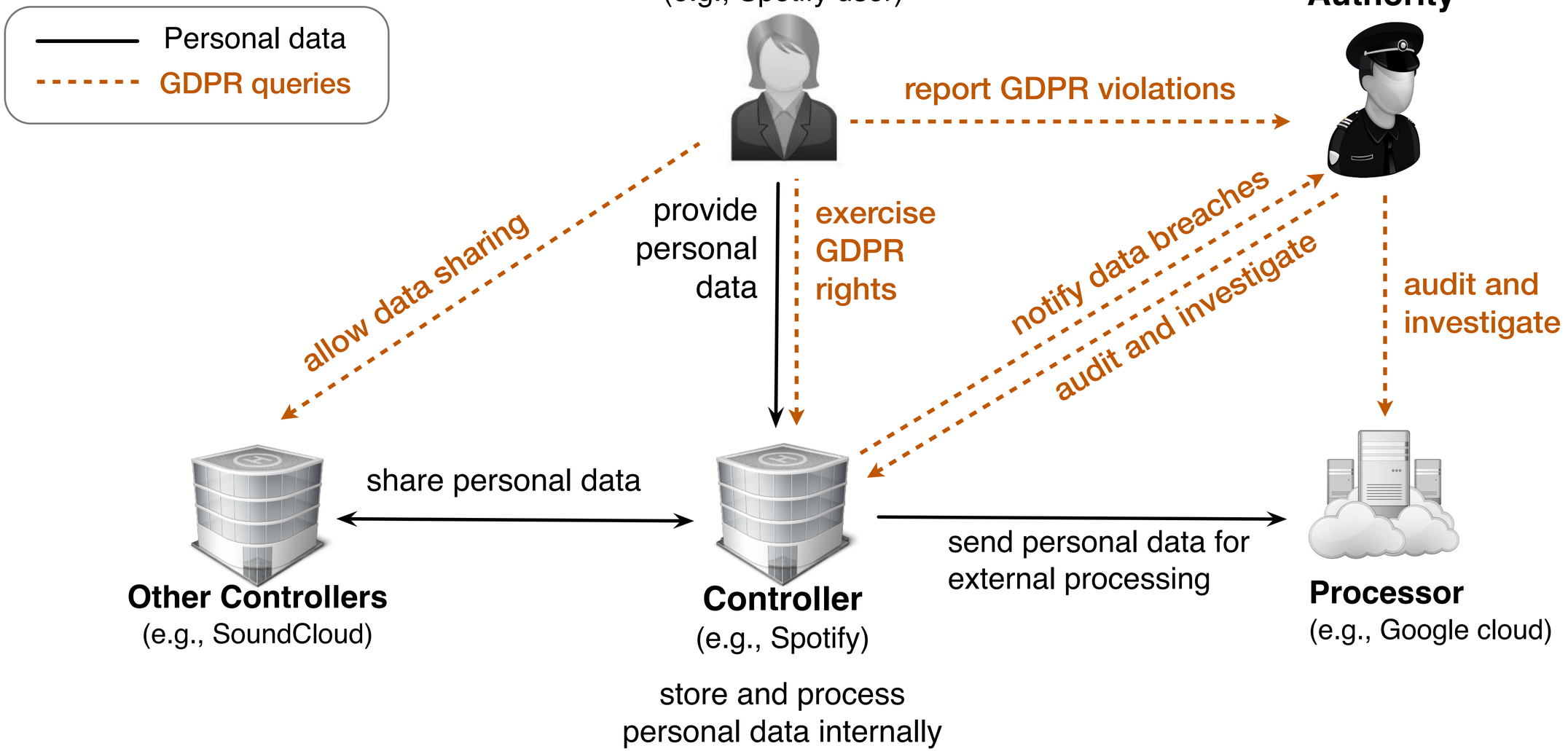
Covers entire lifecycle

Collection, processing, protection, transfer
and deletion; Regulated via 99 articles

Hefty penalty

Max penalty of 4% of global revenue
or €20 million, whichever is greater

GDPR Entities



GDPR in the Wild

Terminated

KLOUT

iab europe

Adapted

USA TODAY

The New York Times

Advertised compliance

BigTech

Assumed compliance

everyone else

<50%

estimated compliance

By the end of 2018 [Gartner 2018]

94,622

complaints from people

In the first 9 months of GDPR rollout

Internet-era systems have **primarily** focused on reliability, scalability, and affordability.

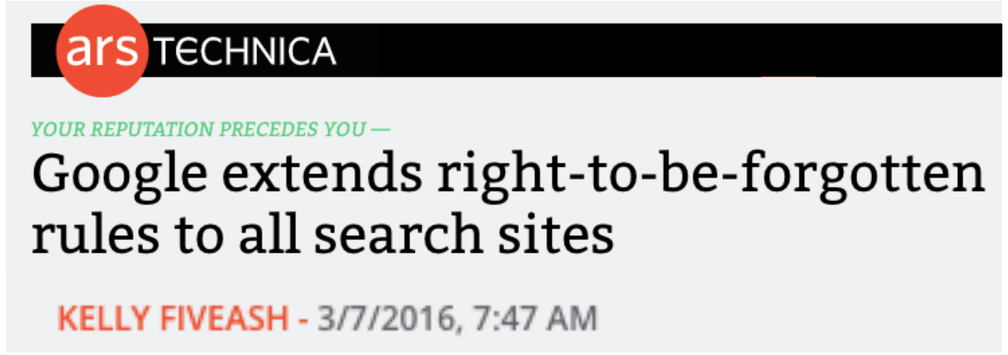
KEY OBSERVATION

Relegating security and privacy as afterthoughts has given rise to **principles** and **practices** that are **at odds** with **GDPR**.

The Seven GDPR Sins

1. Storing Data Forever

BEFORE



AFTER

180 days

Time that **Google cloud** requires to guarantee that a requested personal data item is fully deleted

§17: Right To Be Forgotten

(1) The data subject shall have the right to obtain from the controller the erasure of personal data without undue delay [...]

§ 5(1)(E): Storage Limitation

"[...] kept for no longer than is necessary for the purposes for which the personal data are processed [...]"

2. Reusing Data Indiscriminately

BEFORE

Facebook is using your 2FA phone number to target ads at you

Reported by GIZMODO on 9/26/2018

AFTER

€50M

On Jan 21st 2019, the French DPA levied the **largest** GDPR fine yet on **Google** for **purpose bundling**

§ 5(1)(B): Purpose Limitation

"Personal data shall be collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes […]"

§ 21: Right To Object

"(1)The data subject shall have the right to object at any time to processing of personal data concerning him or her […]."

3. Creating Black Markets and Walled Gardens

BEFORE

3000+

Unique data points
per US consumer

AFTER

iab europe

Many programmatic
ad exchanges shut down

Introducing Google Takeout

§14: Information To Be Provided Where Personal Data Have Not Been Obtained From The Data Subject

"(1) (c) the purposes of the processing [...]. (e) the recipients [...]. (2) (a) the period for which the personal data will be stored [...]. (f) from which source the personal data originate [...]."

§ 20: Right to Data Portability

"(1) The data subject shall have the right to receive the personal data concerning him or her, which he or she has provided to a controller. (2) [...] the right to have the personal data transmitted directly from one controller to another."

Source: 2014 FTC report on 9 largest personal data brokers

4. Risk Agnostic Data Processing (*a.k.a Move fast and break Things*)

BEFORE

STRAVA™

AFTER

>50M

User accounts hacked in 2018, after Facebook's **View-As** feature was exploited.

§ 35: Data Protection Impact Assessment

"Where processing, in particular using new technologies, is likely to result in a high risk to the rights of natural persons, the controller shall, prior to the processing, carry out an assessment of the impact of the envisaged processing."

§ 36: Prior Consultation

"The controller shall consult the supervisory authority prior to processing where [...] it would result in a high risk in absence of measures taken by the controller to mitigate the risk."

5. Hiding Data Breaches

§ 33: Notification of A Personal Data Breach

(1) the controller shall without undue delay and not later than 72 hours after having become aware of it, notify the supervisory authority. [...]
(3) The notification shall at least describe the nature of the personal breach. [...] likely consequences, and [...] measures taken to mitigate its adverse effects."

Breaches in the real world

945

Before GDPR
(worldwide)

41,502

After GDPR
(only Europe)

Reported data breaches **6 months** before and after GDPR

6. Making Unexplainable Decisions

BEFORE

The Atlantic

A Popular Algorithm Is No Better at Predicting Crimes Than Random People

The COMPAS tool is widely used to assess a defendant's risk of committing more crimes, but a new study puts its usefulness into perspective.

AFTER

ICML

Workshop on Human Interpretability in ML

IJCAI

Workshop on Explainable AI

§ 22: Automated Individual Decision-Making

"(1) The data subject shall have the right not to be subject to a decision based solely on automated processing [...]"

§ 15: Right of Access

"(1) The data subject shall have the right to obtain from the controller [...] meaningful information about the logic involved, as well as the significance and the envisaged consequences of such processing."

7. Security as a Secondary Goal

§ 25: Data Protection By Design and By Default

"(1) [...] design to implement data protection principles in an effective manner [...]"

§ 24: Responsibility of the Data Controller

"the controller shall [...] be able to demonstrate that processing is performed in accordance with this Regulation."

Security in the real world

ML-driven reactive security

Concluding Remarks

FUTURE DIRECTIONS

GDPR-compliant Redis

Exploring system-level tradeoff in achieving compliance

Cloud consolidation

Could compliance be better tackled at cloud provider level?

Beyond GDPR

California's CCPA is going into effect 1/1/2020

We want to hear from you!

https://utsaslab.github.io/research/gdpr/