Data protection challenges in the IoT

IOT Forum - Aarhus

20th June 2019

Alain Herrmann

Responsible Units certifications / Data Breach

IoT and personal data

(non-exhaustive list)

Healthcare: wearables and connected medical devices that enable remote health monitoring

- Sensitive data
- High impact on individuals

Connected vehicules

- Tracking movement

Connected toys

- Could reveal sensitive information
- Children's data

Voice assistant

- Profiling
- Could reveal sensitive information
- Biometric authentication

Smartmetering

- Third party apps / services: tracking / profiling at your home

SmartHome

- Third party apps / services: tracking / profiling at your home

Smartbuildings

Smartcities

- Tracking movement
- Freedom of movement

Applicable legislation

General data protection regulation (GDPR – EU 2016/679)

Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (ePrivacy Directive)

2019 / 2020 ? : ePrivacy regulation

Applicable legislation

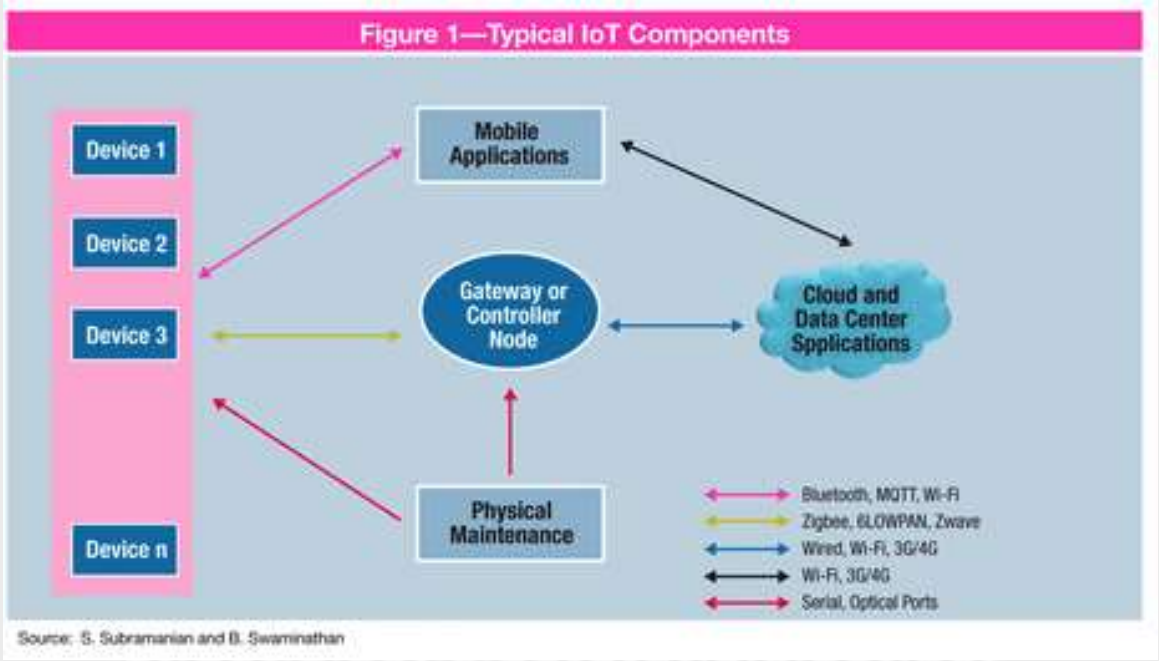
ePrivacy:

- protection of fundamental rights and freedom: respect for private life, confidentiality of communications, protection of personal data in the electronic communications sector.

Main points:

- Includes Over-The-Top (OTT) providers;
- Covers content and associated metadata;
- Consent for tracking;
- Covers machine-to-machine interaction;
- Protection of terminal equipment;

Typical IoT Components



- Significant number of stakeholders: manufacturers, data aggregators or brokers, application developers, social platforms, device lenders or renders,…
- Multiple communication protocols: poor security for some of them

Privacy and data protection challenges

Complex mesh of stakeholders involved

(necessity of a precise allocation of legal responsibilities)

- Device manufacturers:
  - Develop OS / installed software (determining functionality, data and frequency of collection, when and to whom data are transmitted for which purposes)
- Social platforms:
  - Determine purposes for data “pushed” by DS
- Third party application developers:
  - Many sensors expose APIs
  - App developers can have access to the data through the API from an installed software
  - Consent to be obtained from users: clear, specific and informed (not often the case)
- IoT Data Platforms:
  - Storage of the collected data
  - Data platform owner: usage of data for other purposes?
- Processing of data from non-users:
  - Wearable devices like smart glasses are likely to collect data about other data subjects

Privacy and data protection challenges

Lack of control and information asymmetry

- Users under third-party monitoring
- Dissemination of the user's data
- Excessive self-exposure
- Connection between objects can be triggered automatically (without the individual being aware of it)

Quality of the user's consent

- Users may not be aware of the data processing carried out by specific objects
- Classical mechanisms used to obtain individual's consent may be difficult to apply in IoT
  - "low-quality": lack of information + impossible to provide a fine-tuned consent

Inferences derived from data and repurposing of original processing

Privacy and data protection challenges

Application of the article 5(3) of the e-Privacy directive:

- Access / storage of data on the user's "terminal equipment"
- User's consent needs to be obtained before accessing device information + clear and comprehensive information => it can be technically challenging

IoT as sensors are mostly designed to be non-obtrusive (as invisible as possible)

- Risk to the fairness principle

Some recommandations

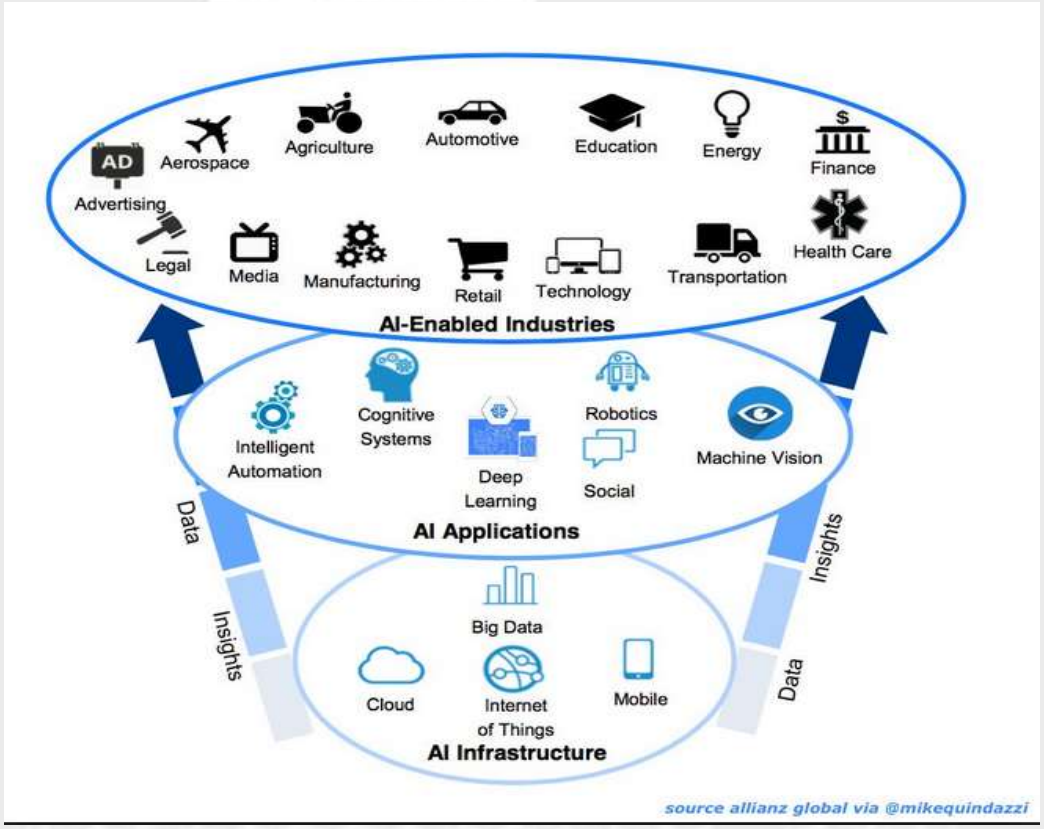
- Privacy impact assessments should be carried out before the launch of any new application;
- The principles of Privacy by Design and Privacy by Default should be applied;
- Raw data should be deleted as soon as data required for processing has been extracted;

Some recommandations

- Data users and subjects should be “in control” – they should be able to determine how their data is used;
- Information about the processing should be given in a user-friendly manner; and
- Consent must be explicit, informed and freely given and users should have the opportunity to withdraw it.

IoT and AI

and cloud, big data, mobile…



- IoT becomes “intelligent” with decision-making autonomy

Thank you for your attention.