

# Internet of Things – a Concept for the Future



Dr. Christian Laux

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## Agenda



- Breaking it down: IoT from a lawyer's perspective
- 6 Legal Issues
- Some Topics to be discussed
- Outlook to the future

## A concept for the Future?



- because the time is ripe
- the instruments are there (transmission protocols, etc.)
- GDPR is restrictive but does not prevent analytics at large
- So why?
- Just because – it works

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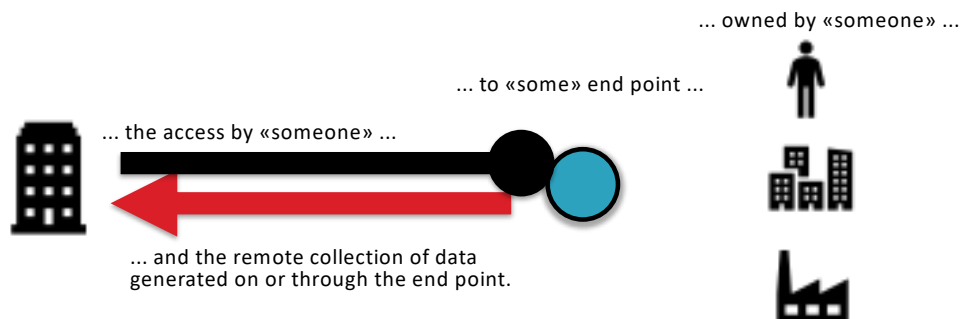
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## What is IoT?



The term Internet of Things stands for ...



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## What means «things» in IoT?



- really anything, namely:
  - things (fridge, cars, railway wagons, etc.)
  - devices (wearables, cell phone, etc.)
  - processes (if made measurable, through logs, etc.)
  - humans (if “connected” through a «device»: cars, phones, wearables, etc.)
  - again: anything.
  
- Condition: anything capable of
  - serving as a sensor or
  - triggering a sensor

In our templates and advisory we therefore use «**end point**» as the most generic term we can think of.

## IoT is not about things, but Data

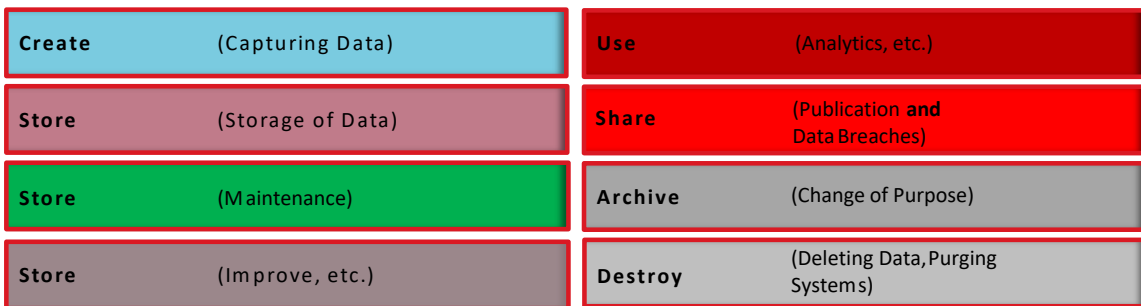


- Of Course.
- Therefore, IoT should be analyzed along the data life cycle

# Data Life Cycle View



storytelling ...



# Step 1: Capture & Collect (Create)

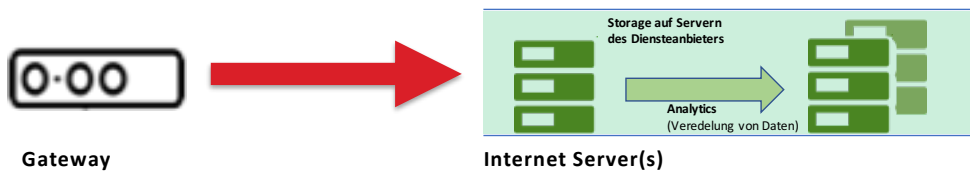


## Collection of Data „out there“

(Sensors, Cars with Sensors, Watches with Sensors, Measurement Stations, etc.)



## Step 2: Transfer (to storage)



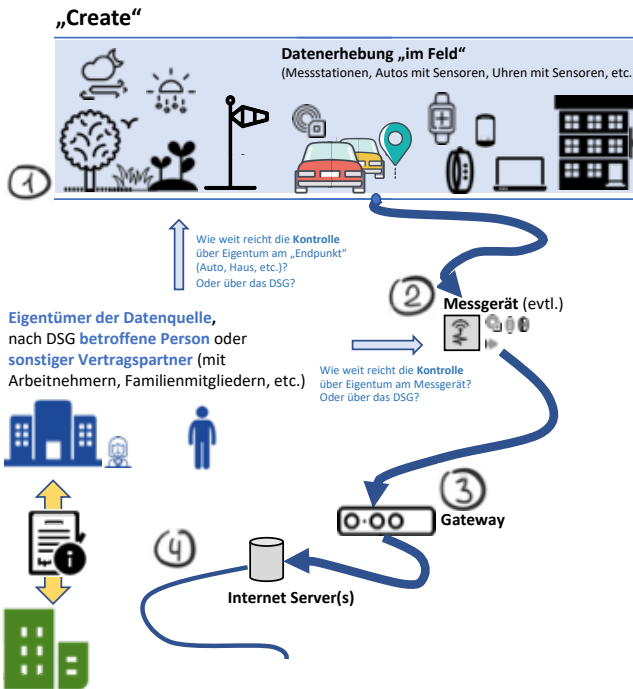
- IoT Setups often require a gateway / some other means of conveying data (e.g. LoRaWAN) to ensure that data are being transmitted to the target server
- Legal Issue: Operator wants to control the data in transfer
- Key Word: Ownership in Data

## Step 2: Transfer (to storage)

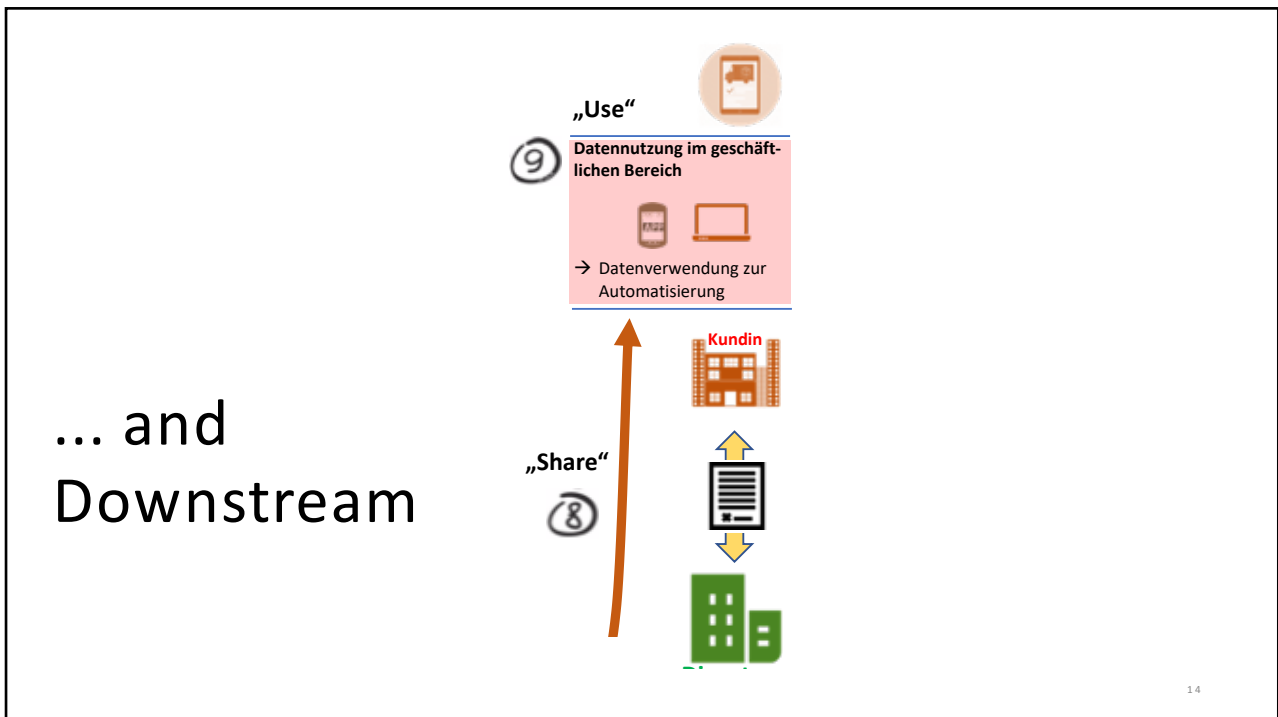
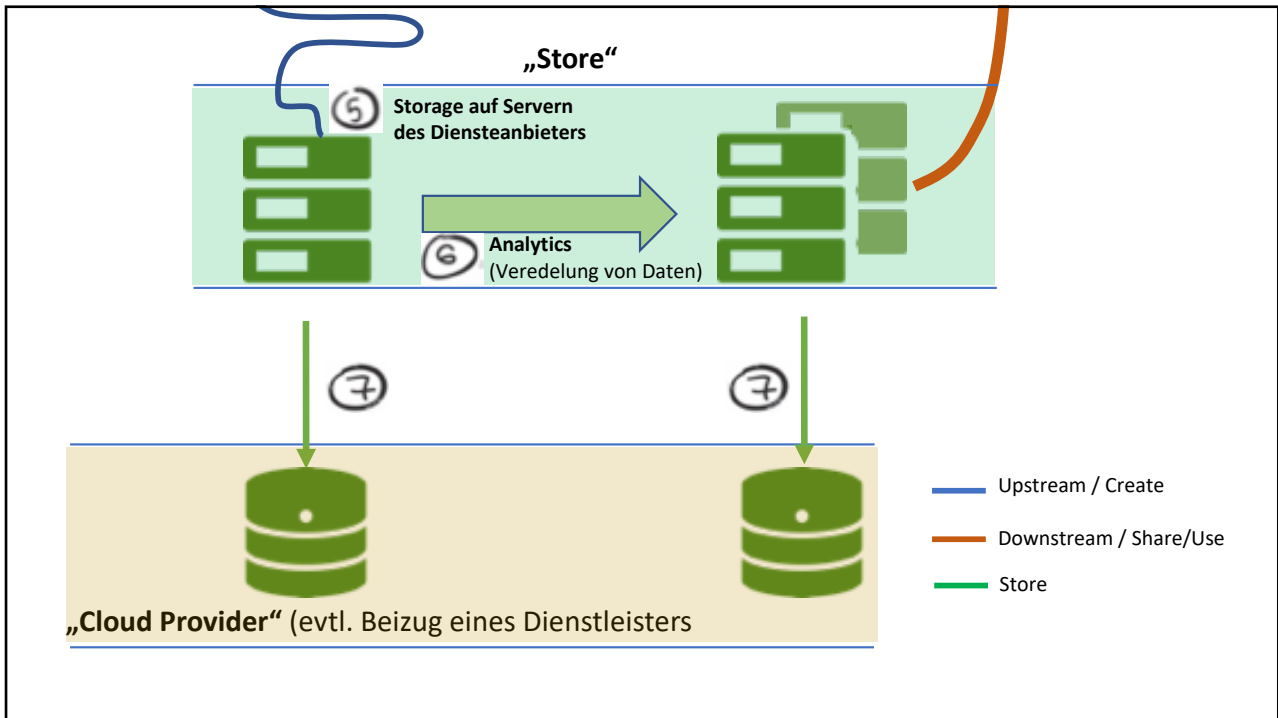


- On the target server, data are being collected, aggregated to build profiles, and analyzed
- Key Words: Cloud Computing, Big Data, Analytics, Profiling, Ownership in Data (again), data protection, perhaps: Unfair Competition

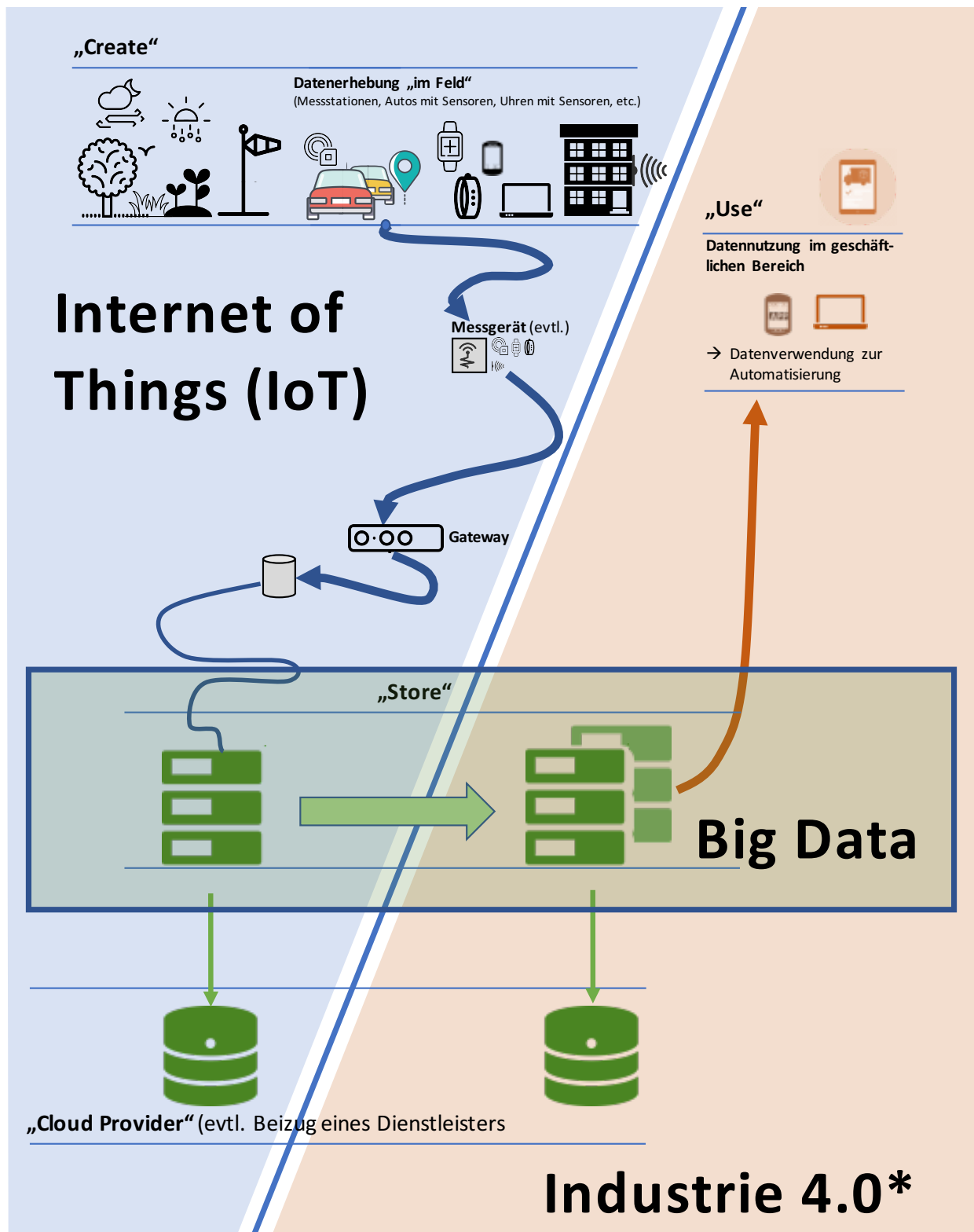
# Full view and link to Industry 4.0



## Upstream



# IoT, Big Data und Industrie 4.0



**\* Anmerkung:**

**Industrie 4.0** verstehen wir als ein Konzept, welches sich auf die industrielle Fertigung und ihre Prozesse bezieht. Sie baut auf einer Vorstufe auf, in deren Rahmen die Fertigung bereits weitgehend automatisiert wurde. Industrie 4.0 verlangt nach digitaler Vernetzung von Fertigungs-/Wartungsmaschinen und -systemen, Logistiksystemen sowie Endprodukten, etc. Letztlich geht es insgesamt um eine digitale Optimierung der Prozesse a) innerhalb des fertigenden Unternehmens; b) an der Schnittstelle zu Support-/Wartungsorganisationen; c) an der Schnittstelle zum Endkunden; d) an der Schnittstelle zu Logistikpartnern; e) an der Schnittstelle zu Lieferanten. Industrie 4.0 ist für uns eine Aufgabenstellung im Bereich B2B.

**B2C:** Es gibt auch Anwendungsbereiche für die mit Hilfe von Daten optimierte Hilfestellung an private Endkunden („Consumer“ „Prosumer“). Diesfalls liegt der Fokus auf dem Konsumentenumfeld (B2C).

## 6 Legal Points



- Ownership in Data
- Agreements with owners of devices / sensors
- Notices to data subjects
- Cloud Computing
- Big Data
- Profiling

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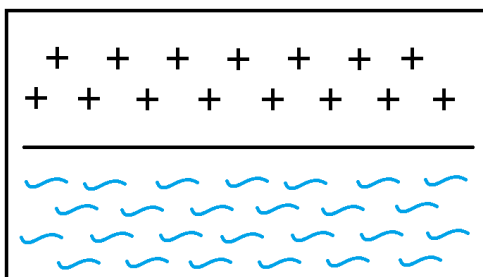
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## 1. Ownership in Data



- Ownership in End Point = Ownership in Data? (No)



Crosses = No IP Protection here

Waves = Free Flow of Information

**IoT Data typically here**

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## 2. Give Notices when Collecting



- Do not disappoint reasonable expectations
- Where Personal Data is being collected, GDPR 13 and 14 require proactive notices
- Process documentation required (GDPR 30)
- Upon request, User Rights to be met

## 3. Agreements



- Enter into agreements with owners of devices
- Enter into agreements with everyone involved in the process of collecting
- Define that you are the only one under the Sun to determine what happens with the data

## 4. Cloud Computing (storage)



- (almost) a no brainer
- GDPR 28 sets the scene
- <https://cloudprivacycheck.eu/>



### Personal Data

Does the transaction in question affect personal data in any way?



### Third Party

Is the data processed by or visible to the Cloud Service Provider?



### Cross-Border

Does any of the data leave the customer's country?



### Subcontractor

Are any subcontractors involved in the setup?

## 5. Big Data



- Big Data: a number of «v's» make Big Data
- Not necessarily consisting of personal data
- Big Data plus «dangerous statements» = Profiling

## 6. Profiling



„Profiling“ means any form of **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 [resulting in a «dangerous» collection of data]
  - to predict [resulting in a «dangerous» statement]

aspects concerning that natural person's performance at work, economic situation, health, personal preferences, interests, reliability, behaviour, location or movements

## 6. Profiling (GDPR 21 + 22)



- Requires a Notification to Data Subject
- Gives an unconditional Right to Object (context: direct marketing)
- Gives a conditional Right to Object (e.g. not if provider has better interests or legal reasons)
- As a rule, no Automated Decisions to be made without Human Interactions
- A possibility for the Data Subject to be heard prior to such Automated Decisions

## Some Questions



## How to design an IoT-System?



- Treat the system as if it had personal data in it (except if it is clear it has no implication from a data protection perspective)
- Do the compliance exercises
- Do not go with consent (for data protection reasons)
- Make sure you control step in the workflow (ownership)
- Control means: Access, Use, Deletion
- Take security issues seriously
- Establish segregated systems wherever you can

## How to perform Analytics?



- How to perform Analytics once the data has been transferred to the system operator's servers?
- Anonymization / Risk of Deanonmyzation
- Notification requirements:
  - Purpose modification
  - Anonymization?
- Usually dealt with as follows:
  - Notices
  - Creation of parallel / abridged databases

## How to reuse Big Data



- Make service subject to agreement ensuring you are the only one having control
- Collect more data (and redo the notices, etc.)

## Outlook to the Future (1/3)



- Important to focus on the key interests of society
- Problem with data protection:
  - Focus on numerous compliance issues (information governance)
  - No focus on crucial rights
  - Example: Art. 9 GDPR (well, there is some reasonableness in those ...)

## Outlook to the Future (2/3)



- Data Protection requires a mind shift («reduce to the max»)
  - automated decision making = protects against machines taking over
  - data portability:
    - empowers data subjects
    - has macro economic effects
  - plus
    - protection against denigration and bullying
    - protection against overbroad government power

## Outlook to the Future (3/3)



- Legislators should consistently release laws with a vision about a digital future in mind
- Need for Consistent Data Legislation
- Need to build a data space responding to simple(r) rules
- Considering sector specific regulation instead of one-size-fits-all-approach

## Contact



Dr. Christian Laux  
Rechtsanwalt  
[christian.laux@lauxlawyers.ch](mailto:christian.laux@lauxlawyers.ch)

LAUX LAWYERS AG  
<http://www.lauxlawyers.ch>

Seergartenstrasse 2  
P.O. Box 360  
CH – 8024 Zurich  
+41 44 880 24 24