



Privacy in the Big Data Era

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- ▶ Introduction
 - ▶ Big Data
 - ▶ Profiling
 - ▶ Aspects re Privacy and Data Protection
 - ▶ Quo Vadis Privacy?



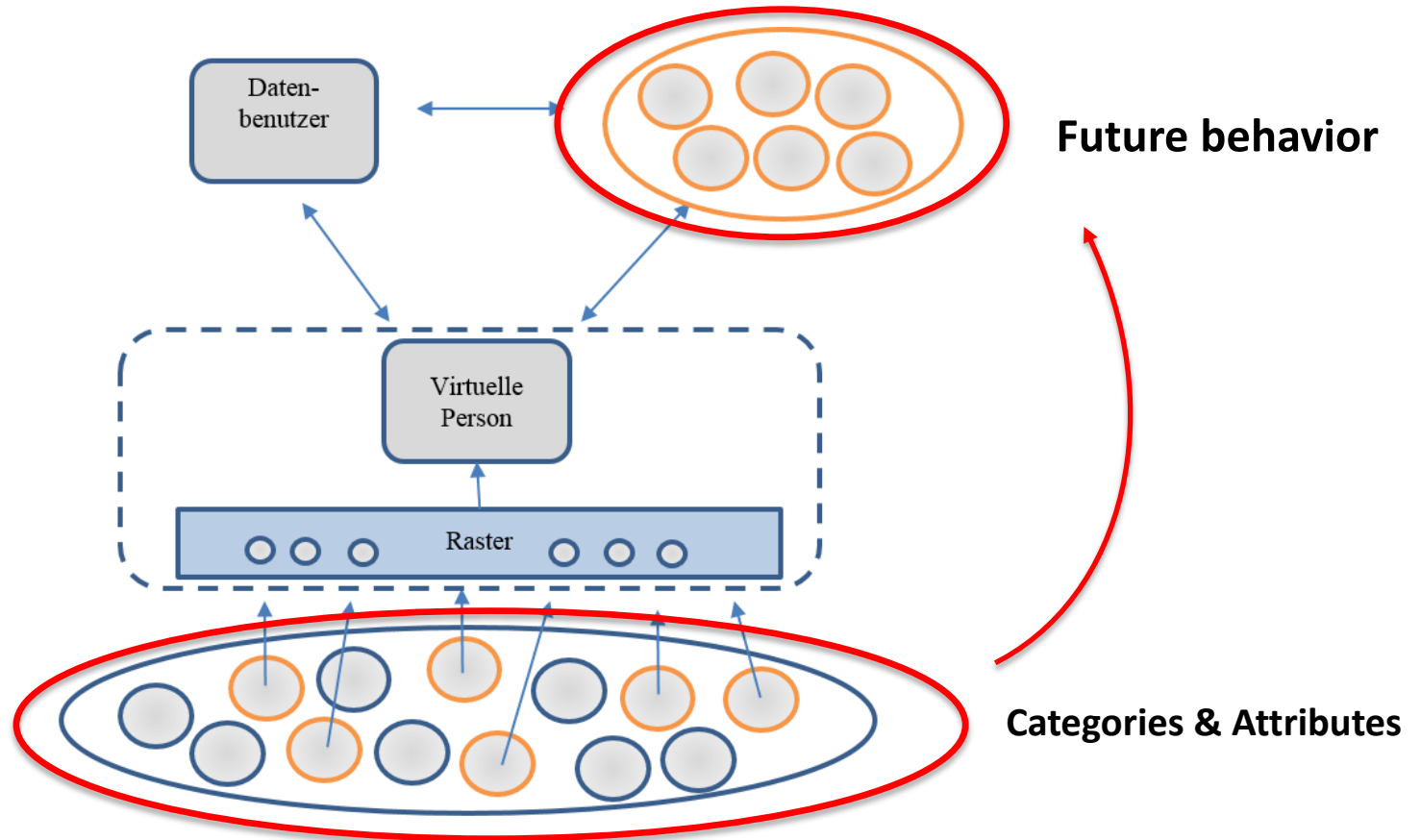
- Information Society
 - Data-driven world
 - Technology is changing our daily life
- Legal Framework
 - Data Protection Law
 - Balanced privacy and data protection framework
 - What data can be used?
 - Information and consent re data proceeding?
 - Applicability of Data Protection Law
- Governance Framework



- 3V's+
 - High Volume
 - High Velocity
 - High Variety
- Core Elements in Privacy Context
 - Correlation between data and an individual or a group to analyze it
 - NoSQL-Technologies: Hadoop, MapReduce, Spark, Storm etc.
 - New possibilities to profile individuals or groups



- Information Society
 - Expanding mass of information
 - Profiling as Method to create order in data
- Profiling
 - Generate knowledge by means of algorithms
 - Correlation: Relation between data
 - Segmentation: Building categories and attributes
 - Aim: Prediction, based on past behavior



Indirect Group Profiling



- Aim: Prediction

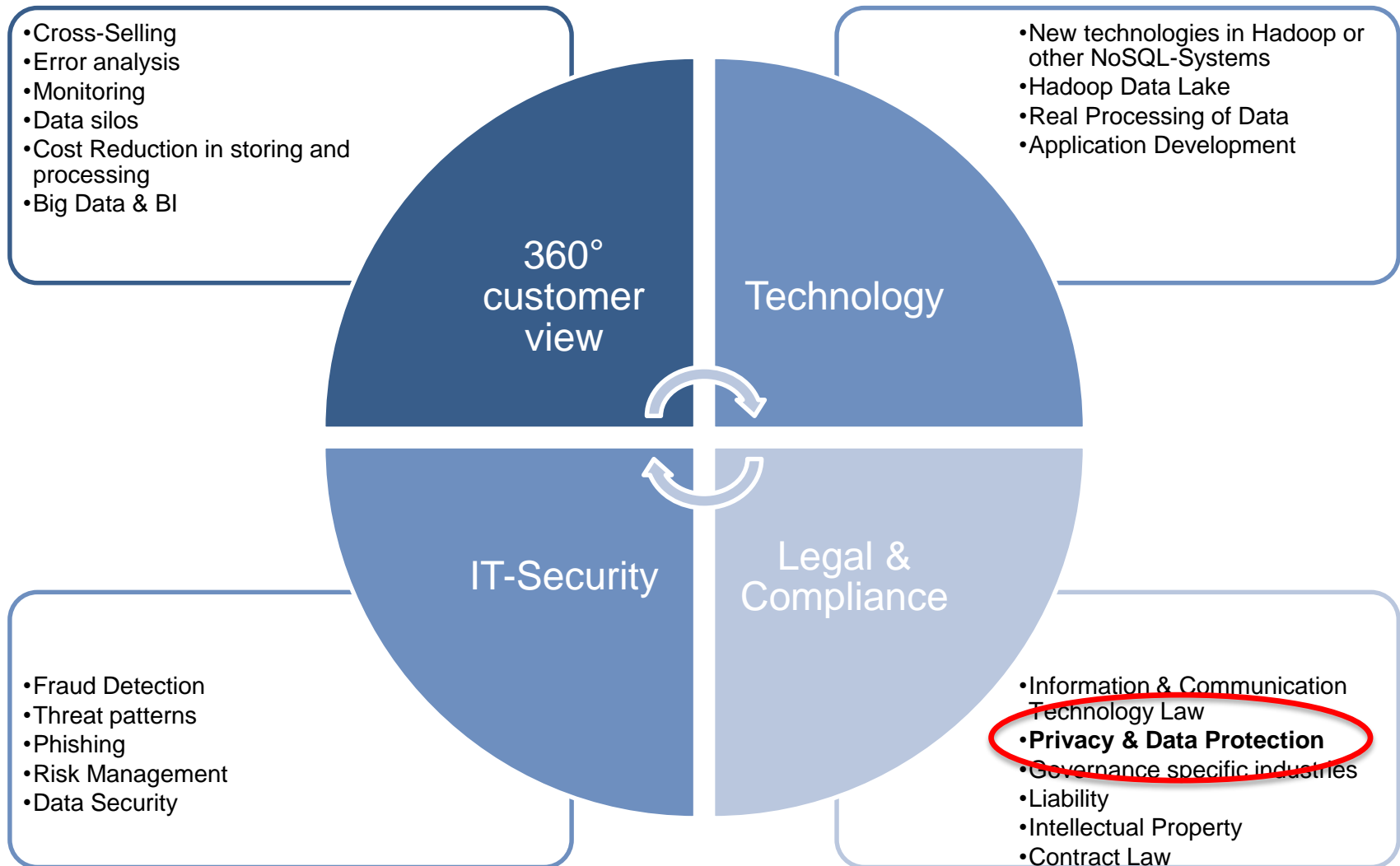
„It's difficult to predict, especially the future“

Niels Bohr, Mathematician (1973)



- Legal issues re Privacy and Data Protection
 - Is the Data Protection Law applicable?
 - What are the threats to privacy?
 - Can someone consent to such a data analysis?
 - Is the concept of anonymization of personal data sufficient?
 - How can sensitive data be processed?
 - Is it possible to anonymize data?
 - Who “owns” a piece of data?
 - Where is the balance between privacy and the interests of Companies?

Governance Framework





- Scope of Federal Act on Data Protection (FADP)

Art. 2 Scope

¹ This Act applies to the processing of data pertaining to natural persons and legal persons by:

- a. private persons;
- b. federal bodies.

Art. 3 Definitions

The following definitions apply:

- a. *personal data (data)*: all information relating to an identified or identifiable person;



- Scope of Federal Act on Data Protection (FADP)

Art. 3 Definitions

The following definitions apply:

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- 1) Must according to one's experience be expected that someone will take enough time and money to identify a person?
- 2) What kind of data are the basis for an identification?



- Information and consent

Art. 4 Principles

⁵ If the consent of the data subject is required for the processing of personal data, such consent is valid only if given voluntarily on the provision of adequate information. Additionally, consent must be given expressly in the case of processing of sensitive personal data or personality profiles.⁹



- Information and consent

Art. 4 Principles

⁵ If the consent of the data subject is required for the processing of personal data, such consent is valid only if given voluntarily on the provision of adequate information. Additionally, consent must be given expressly in the case of processing of sensitive personal data or personality profiles.⁹

- who is responsible for the data and the data processing
- which categories of data will be processed
- for what purpose they are processed
- how the processing is done (phases and data flows)
- to whom data are transferred
- that decision of consent is voluntarily and what the consequences of a refusal of consent are and
- that the given consent may be revoked at any time.



- Purpose and Transparency

Art. 4 Principles

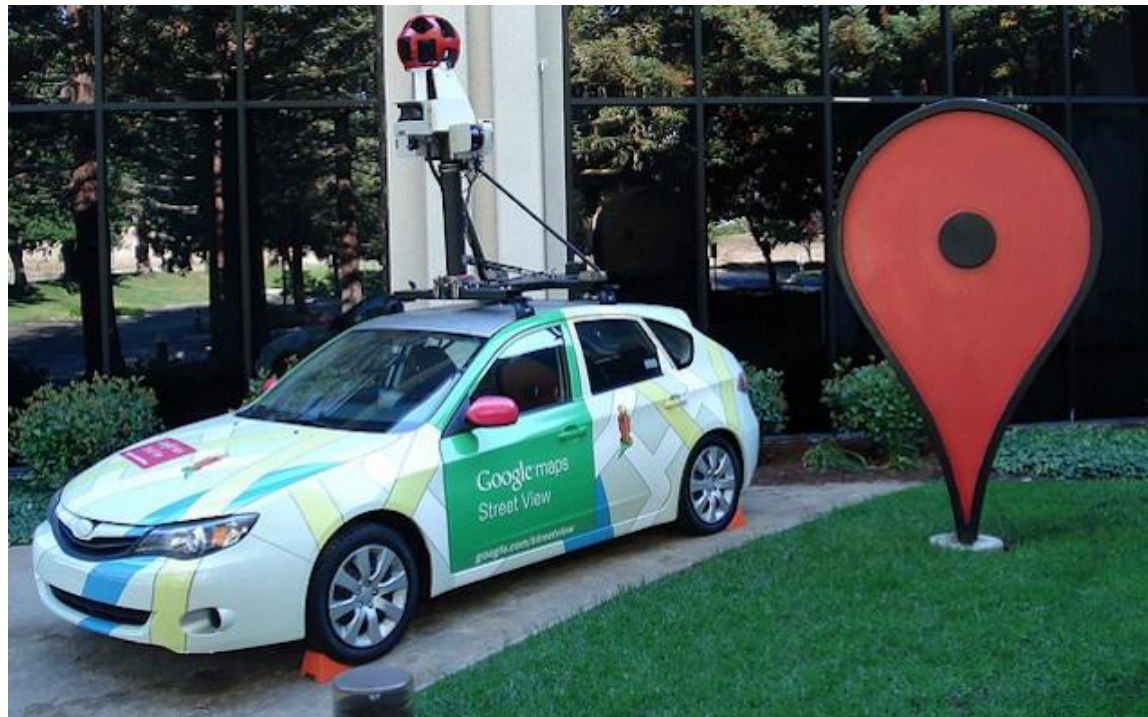
³ Personal data may only be processed for the purpose indicated at the time of collection, that is evident from the circumstances, or that is provided for by law.

⁴ The collection of personal data and in particular the purpose of its processing must be evident to the data subject.⁸



Aspects re Privacy and Data Protection

- Google Street View, BGE 136 II 346



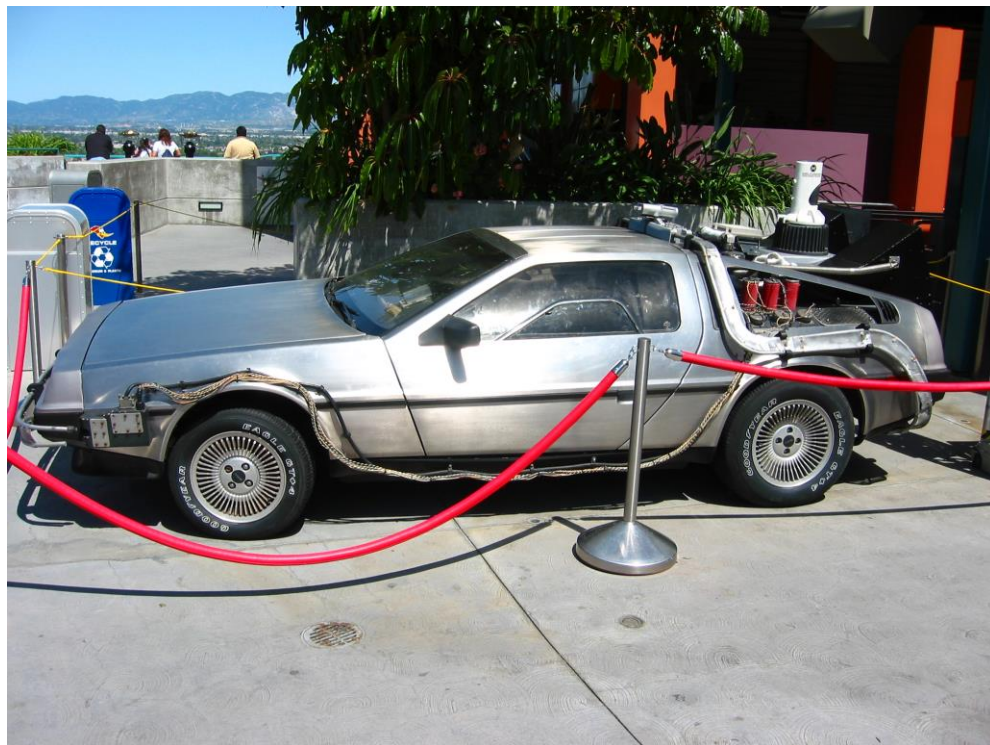
Quo Vadis Privacy?



“The world has changed far more in the past 100 years than in other century in history. The reason is not political or economic but technological.”

Stephen Hawking

Quo Vadis Privacy?



Thank you!

WE ARE BIG DATA EXPERTS

Strategy, Architecture, Systems
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