Legal implications of Big Data

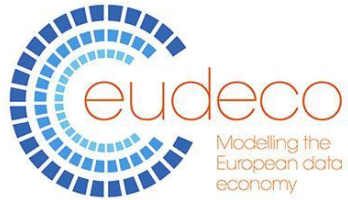
Through the lens of the insurance sector

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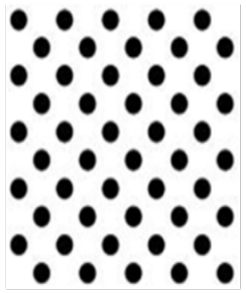
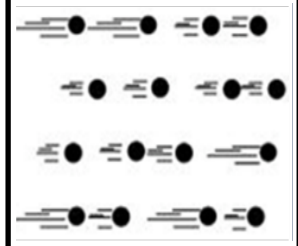
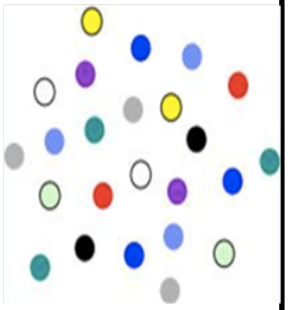


Agenda

1. Big Data
   - What is new?
   - Why it matters for law
2. Legal perspectives
   - Ownership rights
   - Competition law
   - Privacy and data protection law
   - Discrimination & other risks
3. Big data and law in the insurance sector
   - Casa studies
   - Tips
4. Questions?



Big Data – what is new?

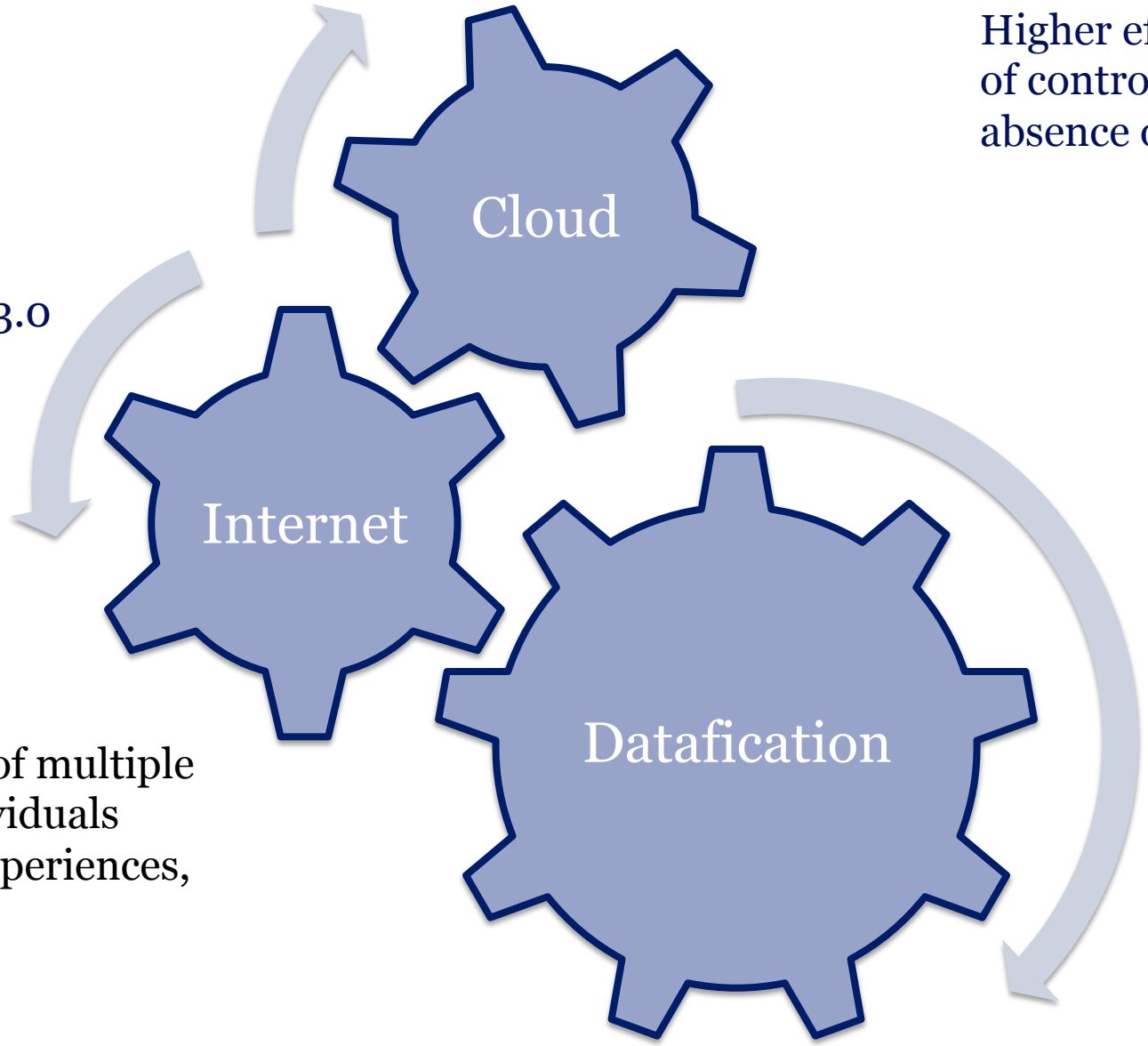
Volume	Velocity	Variety	Veracity	Value
				
Data as Rest	**Data in Motion**	**Data in many forms**	**Data in Doubt**	**Data into Money**
Terabytes to Exabytes of existing data to process	Streaming data, requiring mseconds to respond	Structured, unstructured, text, multimedia …	Uncertainty due to inconsistency & incompleteness, ambiguities, latency, deception	Business models can be associated to the data

"… the technologies, the set of tools, the data and the [predictive] analytics used in processing large amount of data."

The European Union Agency for Network and Information Security (ENISA)

Higher efficiency v. lack of control, lock-in, absence of standards

From Web 1.0 to Web 3.0 (Internet of Things)



Transformation into data of multiple aspects of the lives of individuals including relationships, experiences, and moods.

Why does it matter for law?

I. (Big)Data ownership

- **Copyright** *(Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonization of certain aspects of copyright and related rights in the information society & national legislations)*
- **Sui generis right** *(Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases)*
- **The industry data protection right** *(Digital Single Market Strategy in Europe (COM(2015) 192 final; the European Free Flow of Data Initiative to be adopted in 2016)*





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II. Competition

- *"… Concerned with practices that are harmful to the competitive process, in particular with anti-competitive agreements, abusive behaviour by a monopolist, mergers and public restrictions of competition."* (Whish & Bailey, EU Competition law, 2012)
- Protects the process of competition in order to maximise consumer welfare
- Settles the conditions for a free and unrestricted access to market – also on the market of (big, personal) data.



- Potential problems:
  - Big Data could increase barriers to entry because the high costs of investment (Google/ DoubleClick case)
  - Lock-in situation (Facebook)

III. Data protection

- Data Protection Directive → General Data Protection Regulation *(enters in force in May 2018)*
- Strenghtened, more precise provisions; some novel solutions
- Some of the key provisions:
  - **Purpose specification and purpose limitation (Art. 5 of the GDPR):** collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes;
  - **Data minimisation (Art. 5 of the GDPR):** organisations should minimise the amount of data they collect and process, and the length of time they keep the data
  - **Control rights (Chapter 2 of the GDPR, Art. 12-22):** the right to access, the right to information, the right to data portability, the right to object to automated processing
  - **Consent (Art 4(11) of the GDPR):** *"... Consent should be given by a clear affirmative act establishing a freely given, specific, informed and unambiguous indication of the data subject's agreement to the processing of personal data relating to him or her."*



- **Specific purpose principle in conflict with predictive analysis**
  - In big data mining the insights cannot be defined in advance; they emerge as a result of data science
  - Wide formulations to avoid specificity

- **Ineffective data subject rights**
  - How to ask for information about something that is carried out behind the scenes?
  - 'Black–box' society

- **'Shaky' consent**
  - Questionable whether data subjects are capable of making conscious, rational and autonomous choices
  - In the world of complex privacy policies and hidden algorithms, consent is rarely 'informed' and 'free'

- **Impossible data minimization**
  – In direct conflict with the idea of big data (N = all)
  - Obstacle for several sectors e.g. pharmaceuticals



Privacy, Anti-Discrimination & Fairness

Anonymised data, privacy & discrimination

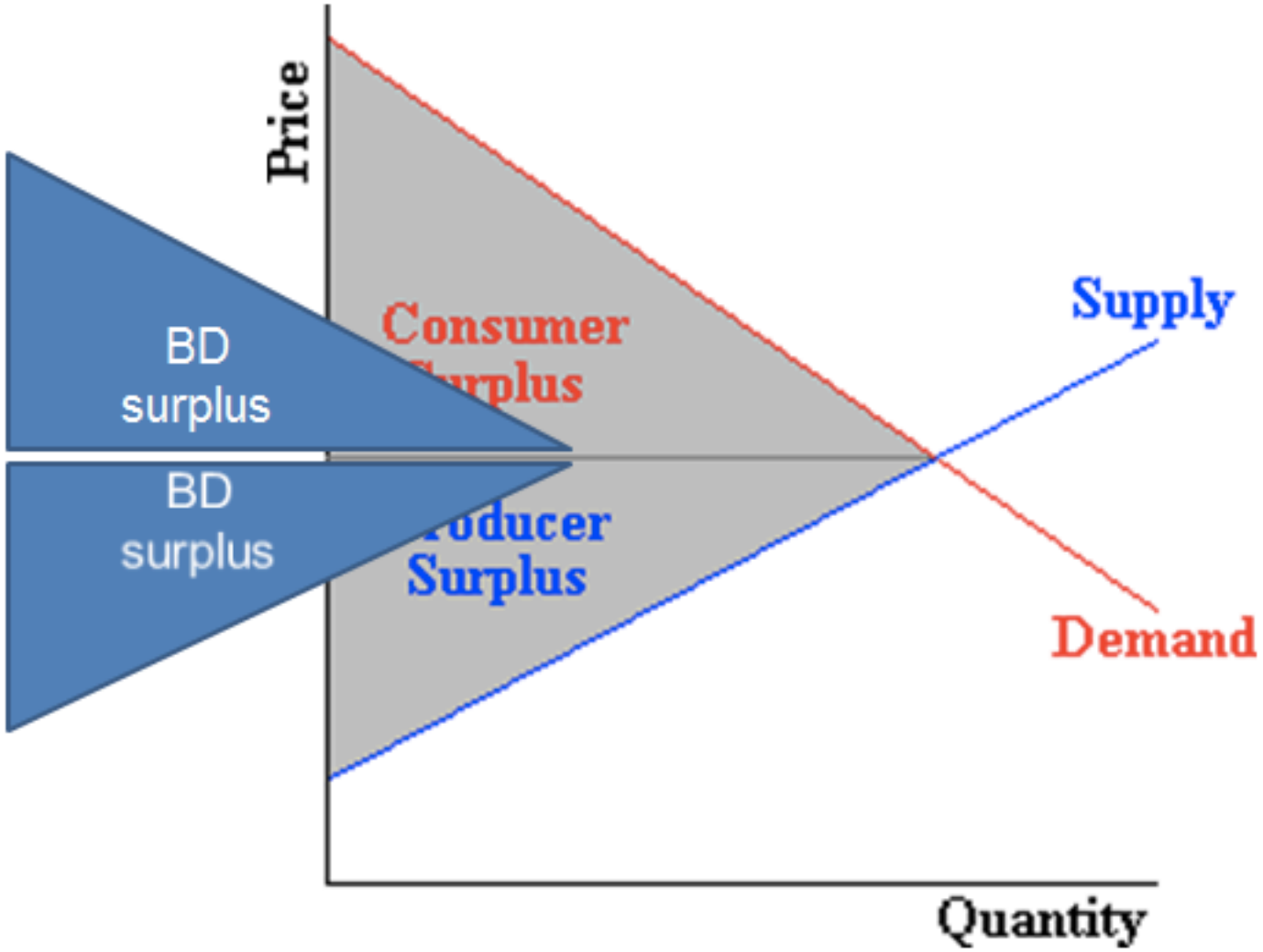
- Anonymised data used to avoid strict data protection laws
- Privacy can be still challenged
- *Example:* differentiation of ethnic groups – the postal code serves as a proxy for ethnicity

Algorithms can be biased

- *Example:* a recruitment program uses an algorithm that learns from the users' discriminatory hiring patterns
- Fairness? Due process?

Price discrimination

- When a company knows everything about consumers' behavioral patterns, wishes and weaknesses, it is able to very precisely estimate their reservation price
- Consumer losing their surplus


Price
BD
surplus
BD
surplus
Consumer
Surplus
Producer
Surplus
Supply
Demand
Quantity

Burning issues for the insurance sector

1. **Fairness & autonomy**

- The use of big data will allow insurers to to monitor policy holders at increasingly lower costs (e.g. IoT)
- Challenges for fairness and personal autonomy

Case study:

- Elder lady



2. Discrimination inside the black-box

- The use of big data can increasingly cause discrimination
- The algorithms may find correlations between risk and vulnerable classes based on non-causal factors

Case study

- Tay-Sachs disease



3. Privacy

- Easier and cheaper to conduct ‘dataveillance’
- Predictive analytics reveals more than an individual would like to

Case study:

- Facebook likes



Tips

- **Open the black box**
- Reconsider and enable **control rights**
- Make use of **anonymous** or pseudonymous data
- Keep **accountability** in mind
- **Be aware**
  - Algorithms are not necessarily objective
  - Data sharing and secondary data use is is not necessarily innocent

Questions?



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