



# THE ECONOMICS OF (BIG) DATA

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I What about Data?

II What about Economics?

III What about Economics of Data?

IV What about Privacy?

V What about Data Governance?

VI The Importance of Economics of (Big) Data

# Consumer Benefits and Costs of sharing Data



Improved Quality

Personalization

Product Variety

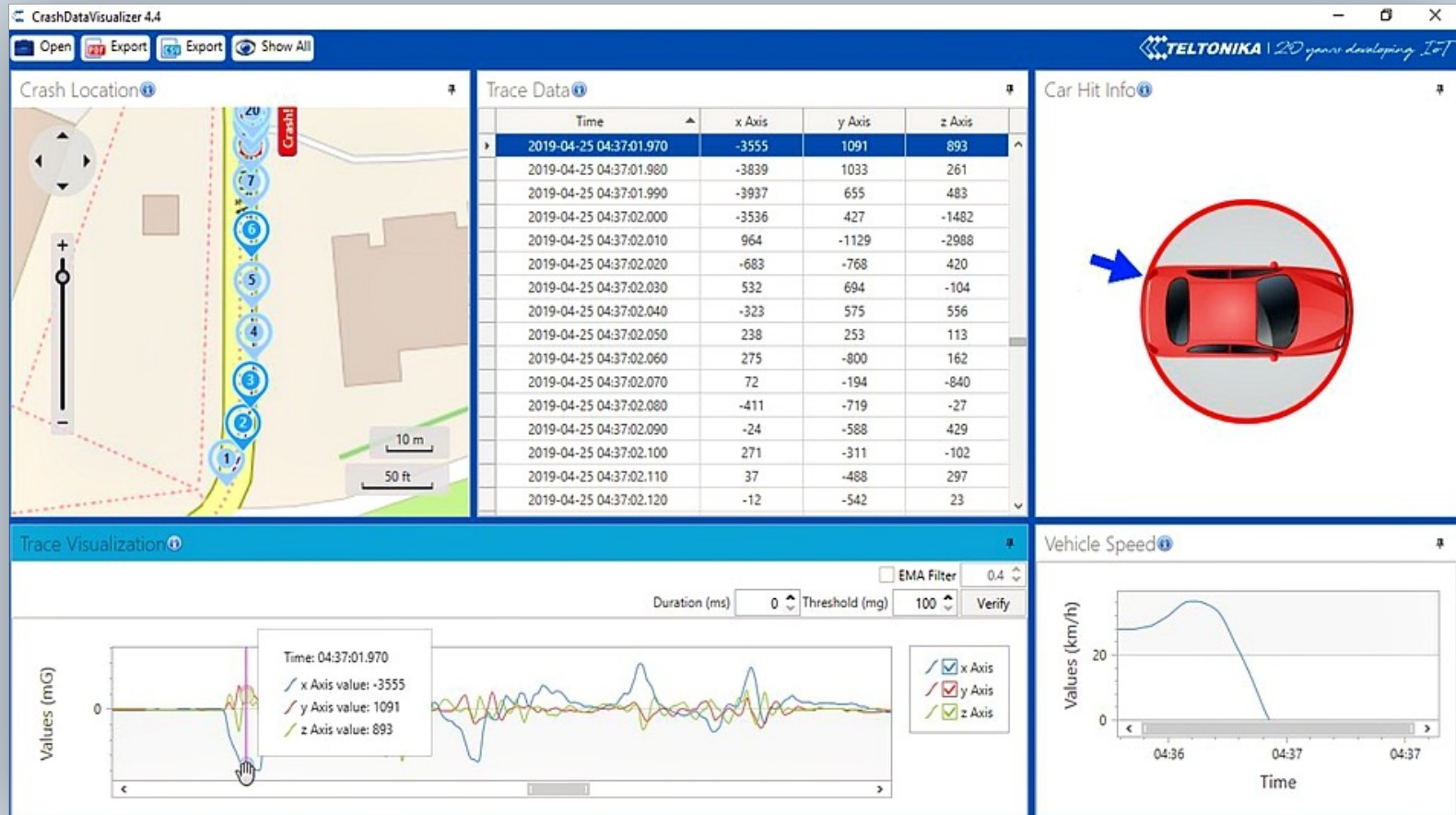
Lower Prices



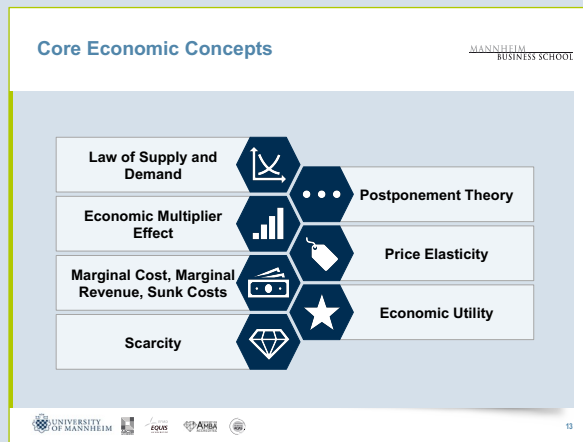
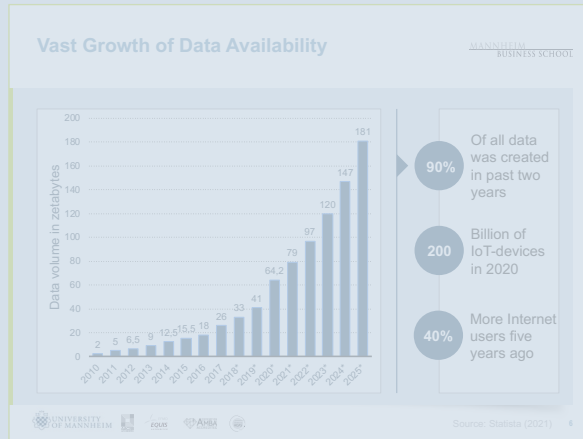
Price Discrimination

Switching Costs

# Usage-based Insurance Driving Trackers



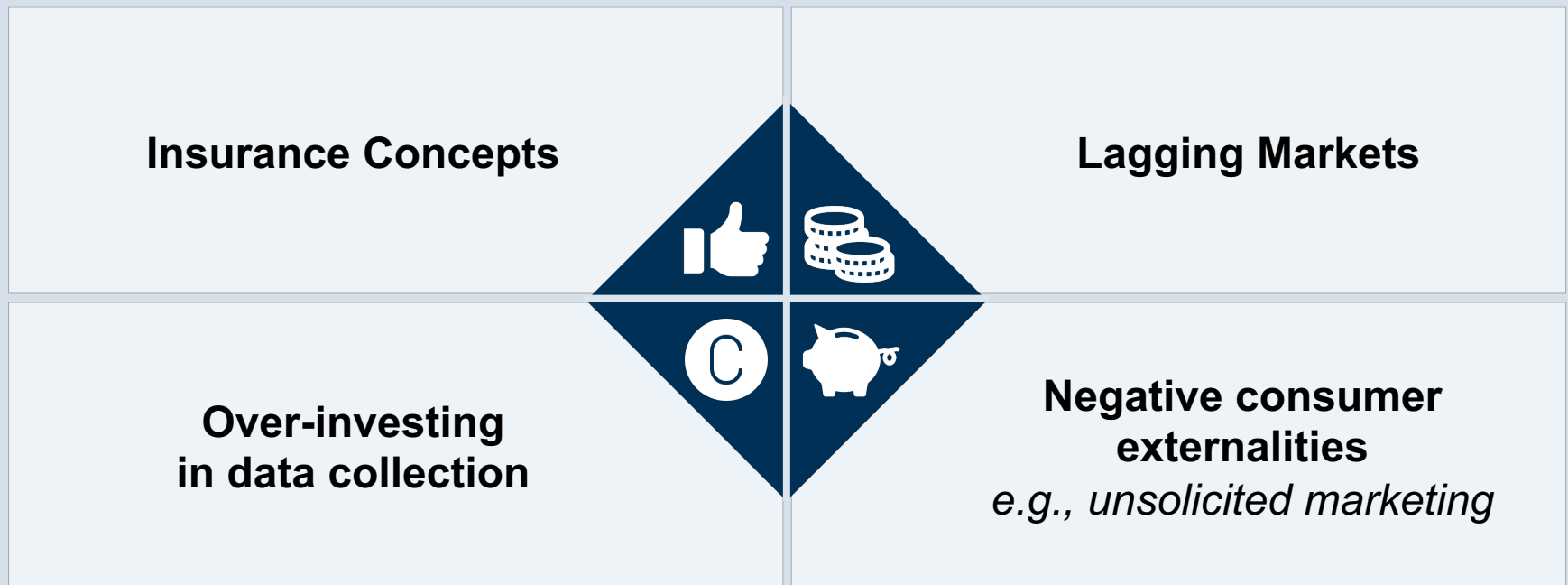
# Privacy as Source of Economic Inefficiencies



- Data Privacy results in less data shared
- Less shared data means less information
- Less information causes inaccuracy in economic models
- Economic inefficiencies arise

# Privacy as Source of Economic Inefficiencies

## - Limitations



# Disclosed vs. Protected Data



## Disclosed Data

**Disclosed data** refers to states in which the **data subject** may have knowingly or unknowingly **shared data with other parties**, or states in which **other parties** may have entered in **possession** of the **subject's data**, independently of her knowledge or even consent.



## Protected Data

**Protected data** refers to situations in which such **disclosures have not taken place**, independently of whether this may be due to the data subject's intentional protection of personal information, or the potential data holder being unable, or uninterested in, accessing the latter.

# Benefits of Disclosed Data for Data Holders



Disclosed Data  
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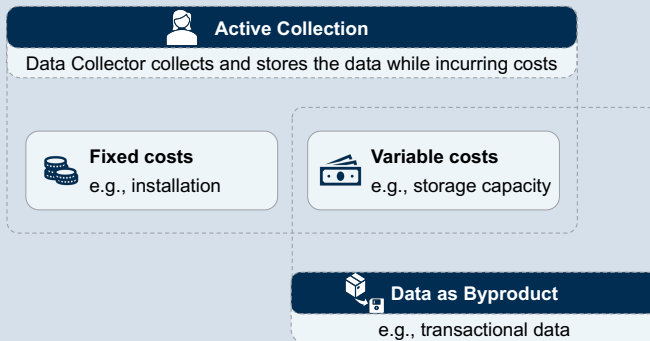
# Benefits of Disclosed Data for Data Subjects



# Costs of Disclosed Data

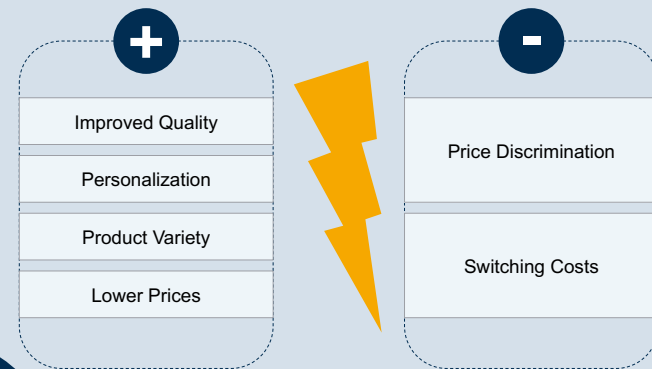
## Supply: The Decision to Produce Data

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BUSINESS SCHOOL



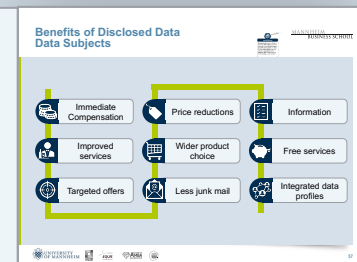
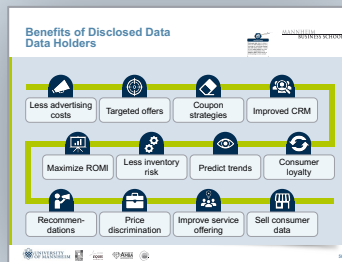
## Consumer Benefits and Costs of sharing Data

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**VS.**

## Opportunity Costs



# Benefits of Protected Data



## Data Holder

- Limiting liabilities
- Limiting costs due to misused data
- Attracting privacy-savvy consumers
- May be revenue enhancing
- Less need for additional authentication processes



## Data Subjects

- Being less transparent to firms (e.g., in terms of willingness-to-pay)
- Some foregone benefits are dispensable due to suitable alternatives

# Costs of Protecting Data



## Data Holder

- Social losses due to incoherent privacy policies
- Second order effects (inefficient investments in data protection)



## Data Subjects

- Cognitive costs (e.g., time spent on informing, on changing one's habits, etc.)
- Money spent for privacy enhancing technologies
- Opportunity costs

# Framing the trade-off

