# Creating value with data: an holistic perspective

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**we should definitely not talk about "data"**
Latour B., 1993
in « The invisible work of data », Denis J., 2018

"RAW DATA" IS AN OXYMORON

EDITED BY LISA GITELMAN
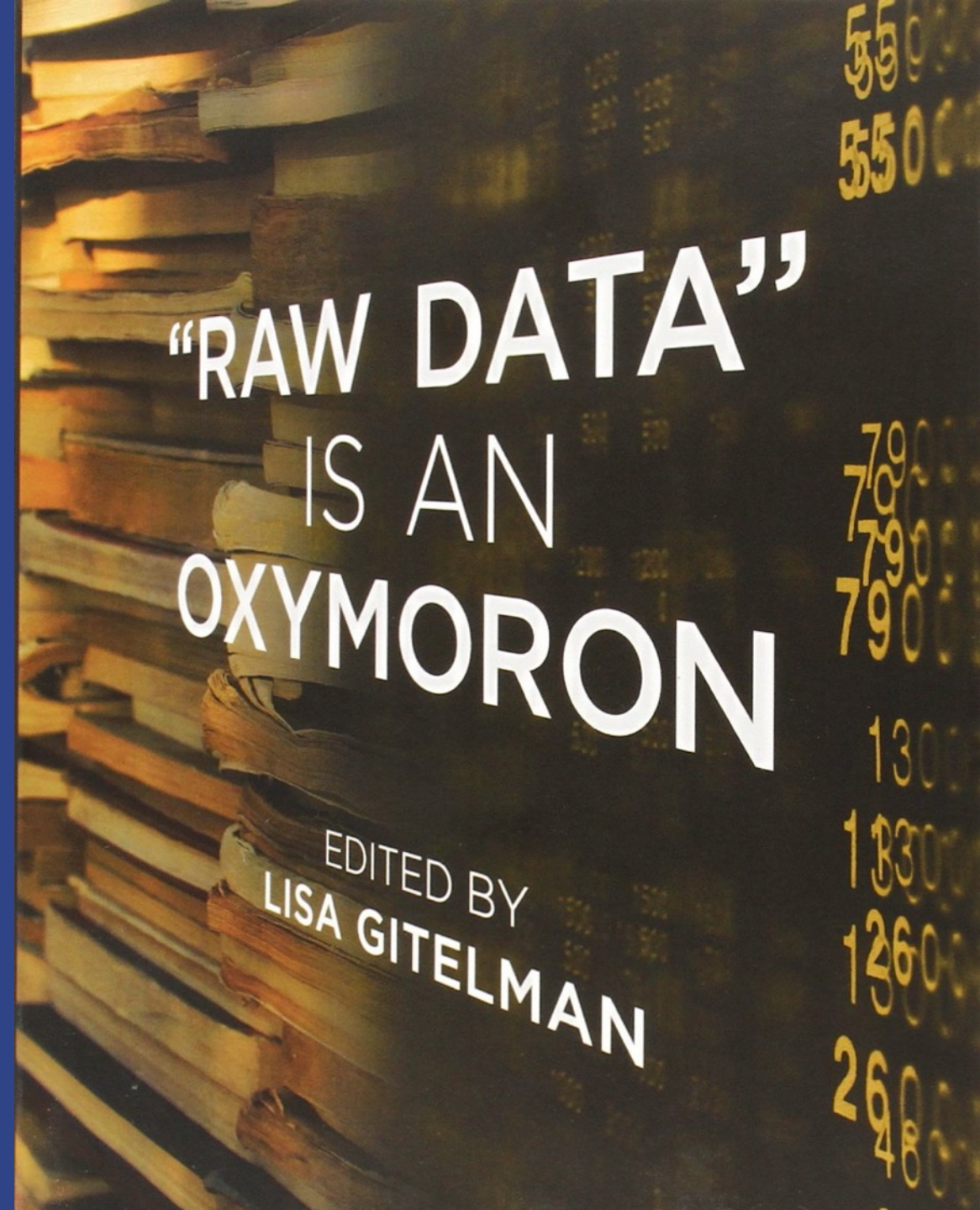
# Variety & Complexity of data collection & production process

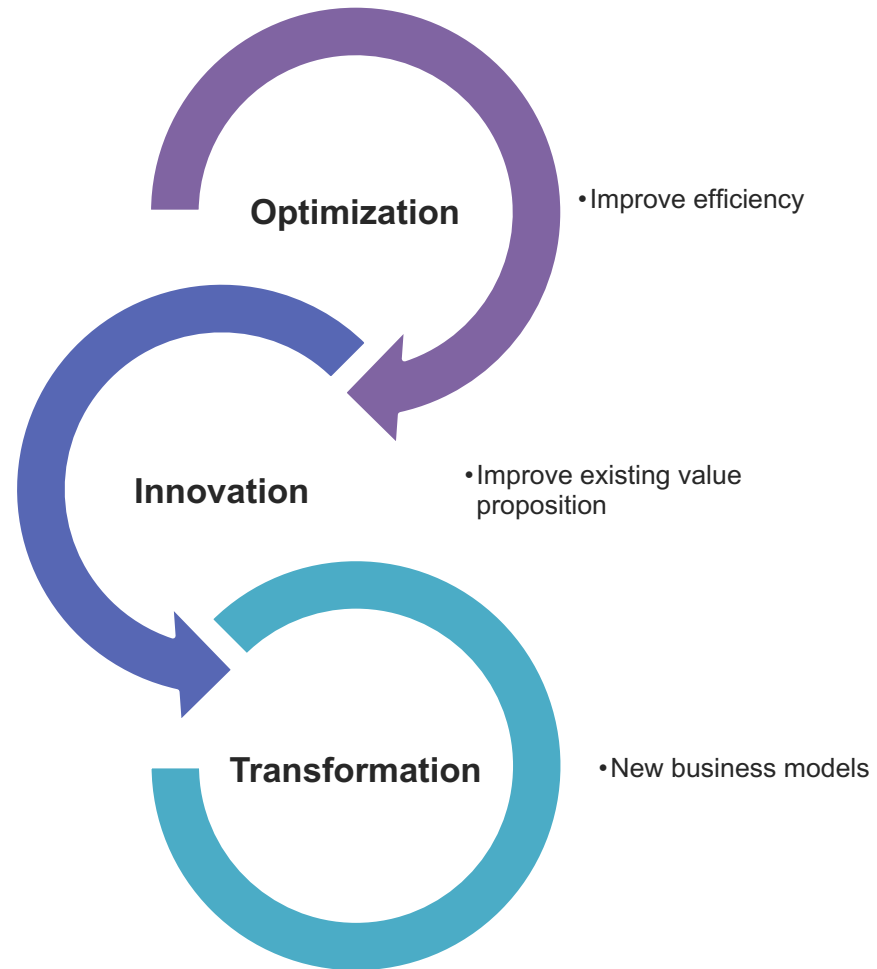| | Pre-exist before exchange | Produced during exchange |
|---|---|---|
| **User Generated** | Identity data from the user | Transactional Data<br>User Generated data |
| **Digital Interaction Generated** | Contractual data | Real-time data<br>Industrial data (M2M)<br>Navigation data<br>Behavioral data<br>(*by-product*) |

Source: Isaac, (2018)
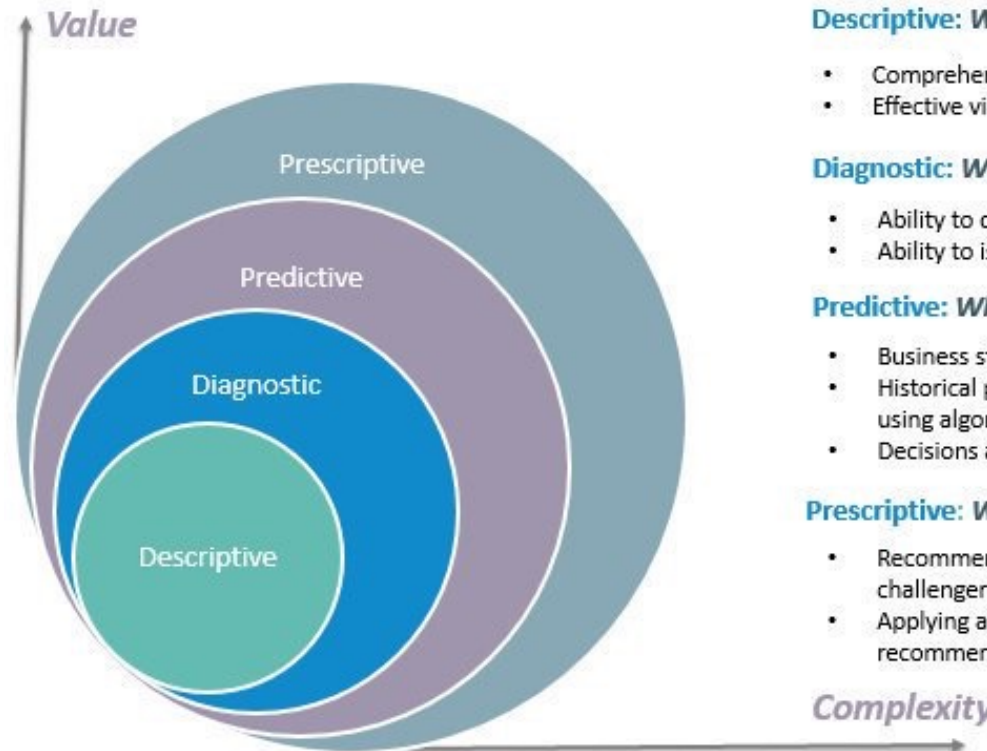
# From CDO to CDO

- From CDO to CDO
  - Chief Digital Officer to Chief Data Officer
- separation of the data management function from the information systems management function
- Data has become so strategic and complexe that it requires a dedicated team, an organization, processes, even a culture

# Data is not only an enabler, it's a game changer

**Optimization** •Improve efficiency

**Innovation** •Improve existing value proposition

**Transformation** •New business models

# From descriptive to prescriptive



4 types of Data Analytics

Value

Prescriptive

Predictive

Diagnostic

Descriptive

Complexity

**What is the data telling you?**

**Descriptive: What's happening in my business?**

- Comprehensive, accurate and live data
- Effective visualisation

**Diagnostic: Why is it happening?**

- Ability to drill down to the root-cause
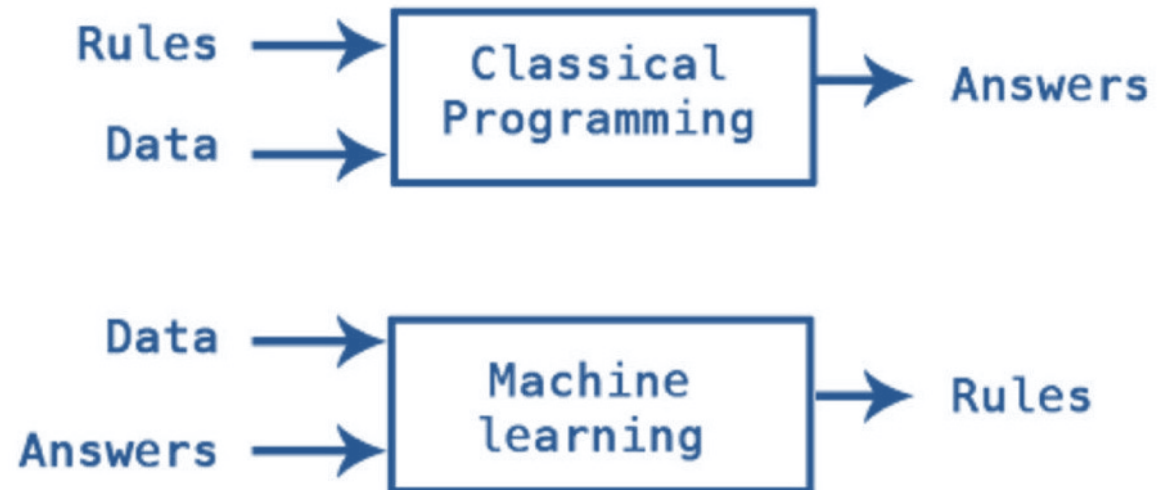- Ability to isolate all confounding information

**Predictive: What's likely to happen?**

- Business strategies have remained fairly consistent over time
- Historical patterns being used to predict specific outcomes using algorithms
- Decisions are automated using algorithms and technology
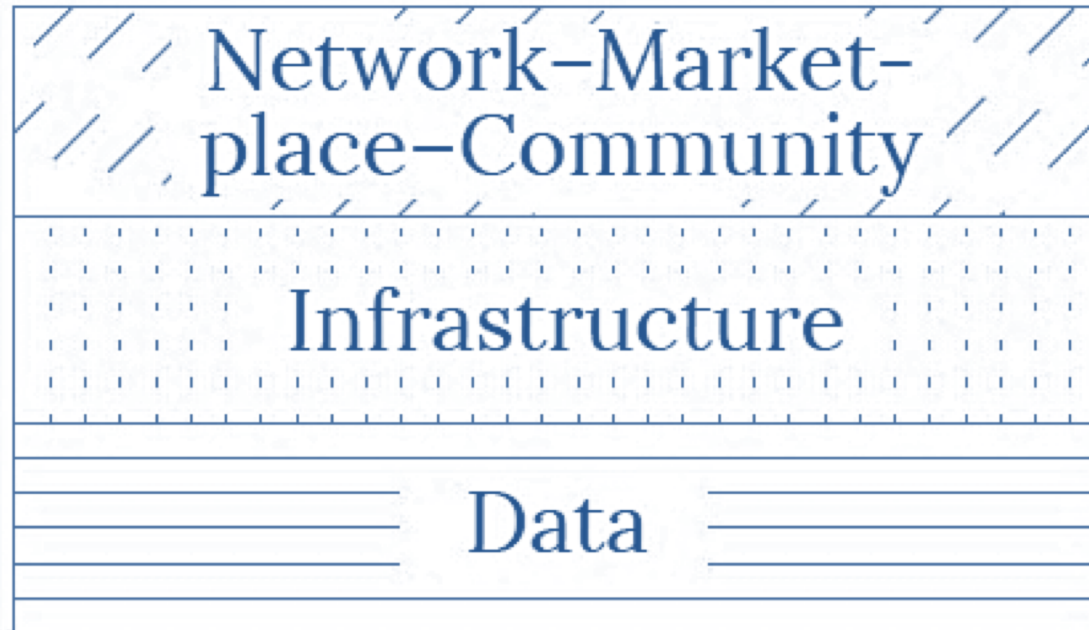
**Prescriptive: What do I need to do?**

- Recommended actions and strategies based on champion / challenger testing strategy outcomes
- Applying advanced analytical techniques to make specific recommendations

Principa
www.principa.co.za

# Machine learning heavily relies on data

# Platform stack
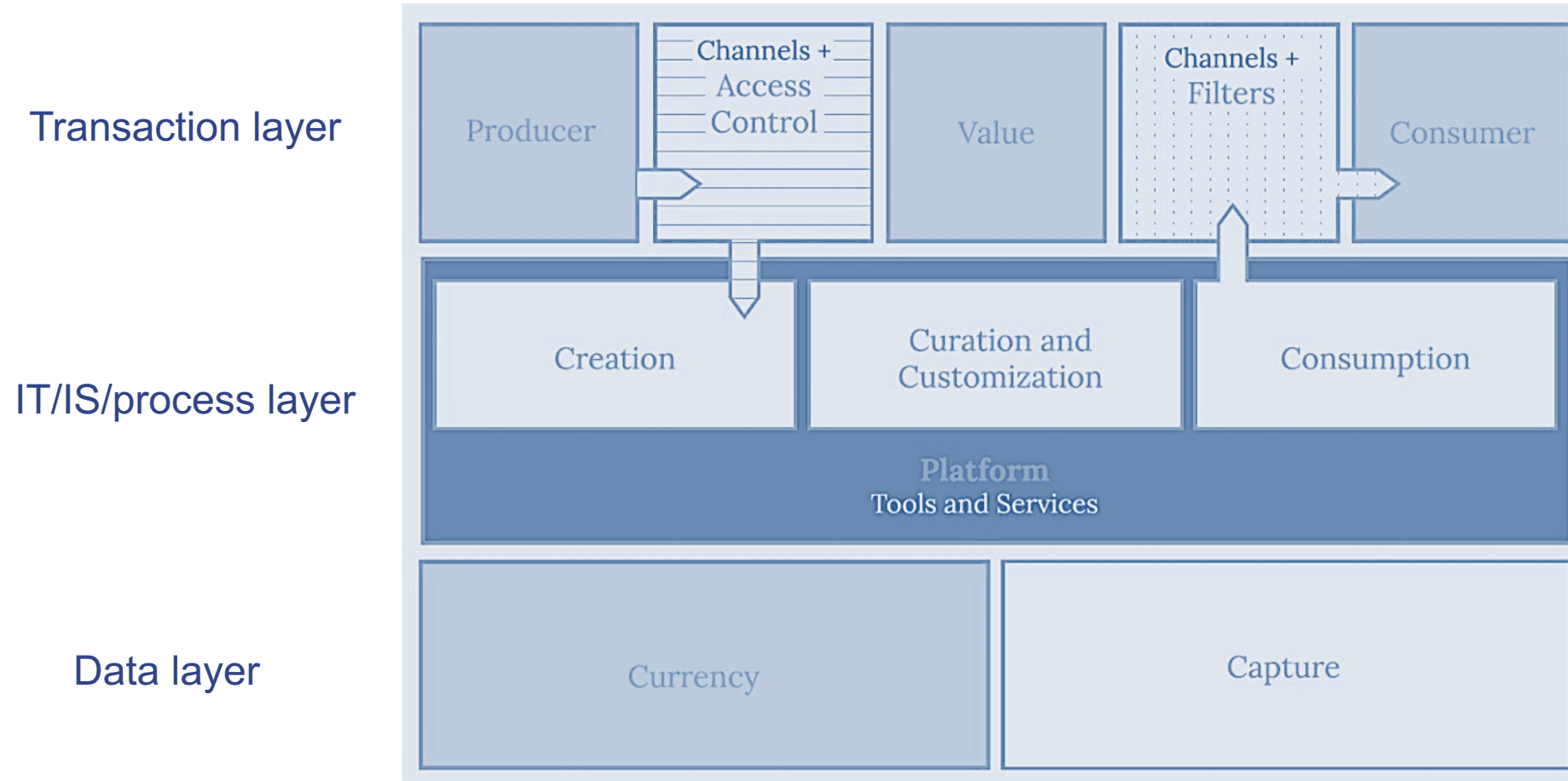
Network-Market-
place–Community

Infrastructure

Data

Platform Stack

Source: S.P. Choudary, (2015), Platform Scale

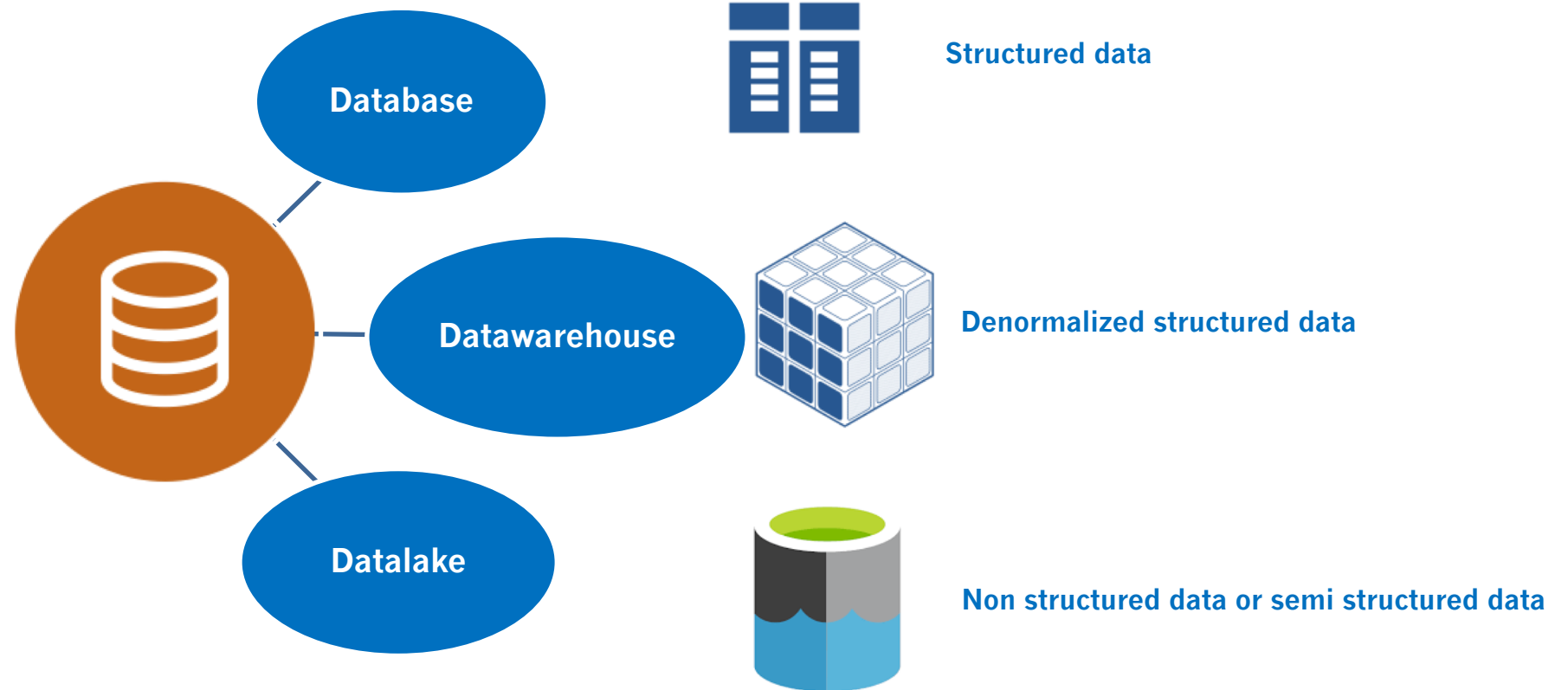# Data driven business model



Transaction layer

IT/IS/process layer

Data layer

# Relative importance of data in a platform model



Youtube

Vimeo
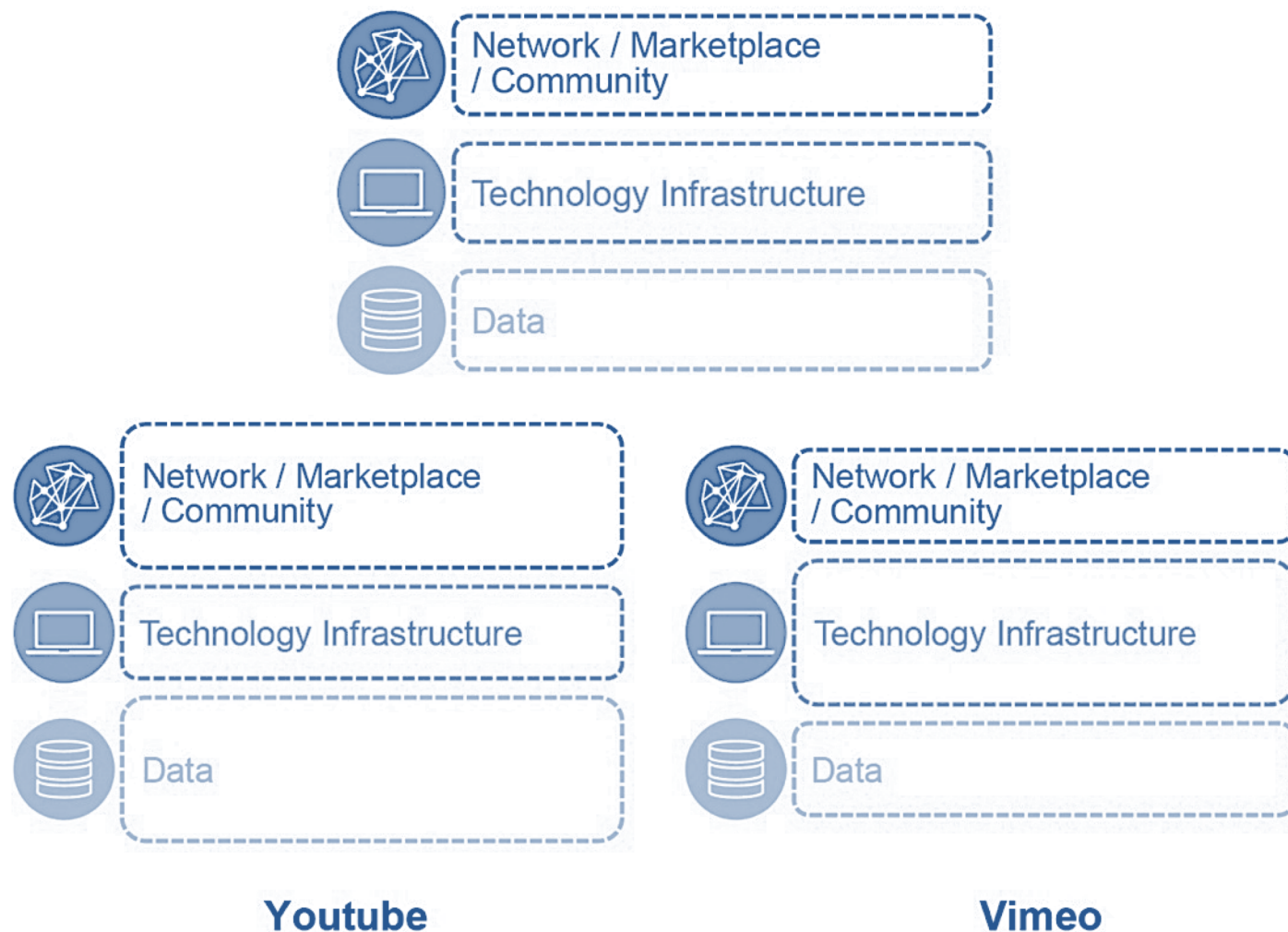
# A general framework for Managing & creating value with data



**Strategic Level**
- Data-driven Business Model
- Ethical rules

**Organizational Level**
- Data Quality
- Data Governance
- Data Compliance
- Data skills

**Operational Level**
- Data Ownership
- Data Collection & Consumption
- Data stewardship

**Technological Level**
- Data
- Meta-Data
- Models Algorithms
- Data Visualization UX/UI
- Data Security
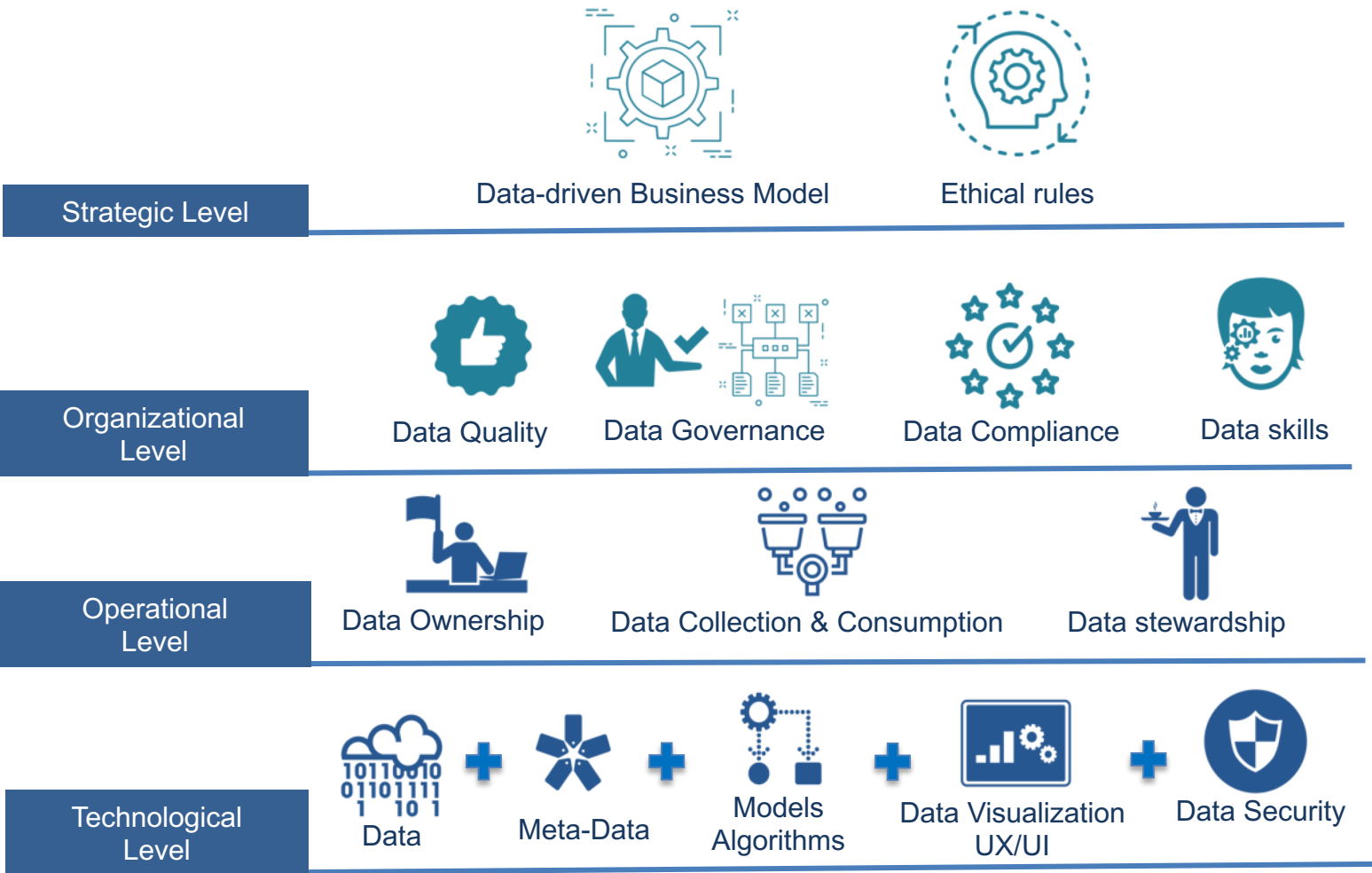
# Technical Organization of data

**Database** — Structured data

**Datawarehouse** — Denormalized structured data

**Datalake** — Non structured data or semi structured data

# Managing new skills
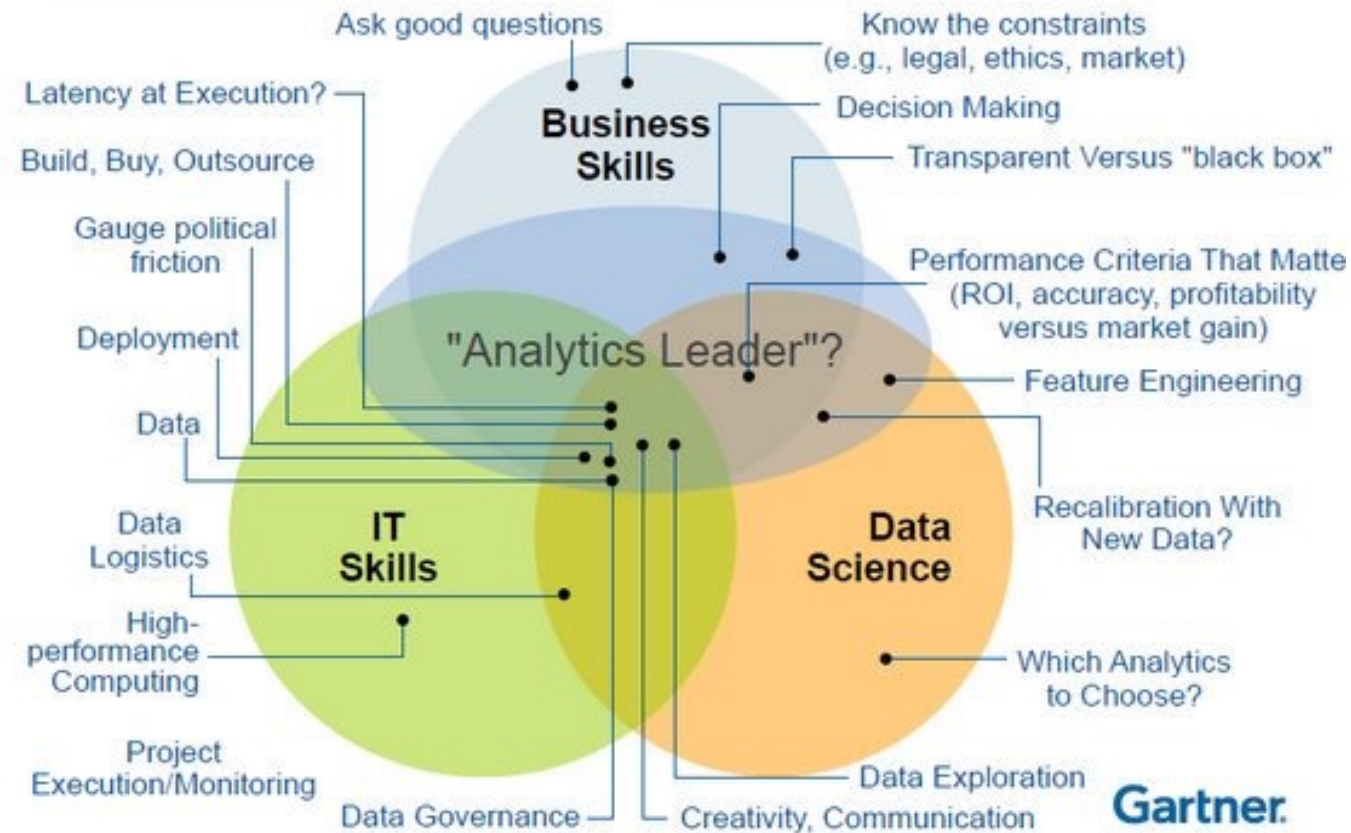
# Hurdles in extracting value from data



| | |
|---|---|
| Dirty data | 49.4% |
| Lack of data science talent | 41.6% |
| Lack of management/financial support | 37.2% |
| Lack of clear question to answer | 30.4% |
| Data unavailable or difficult to access | 30.2% |
| Results not used by decision makers | 24.3% |
| Explaining data science to others | 22.0% |
| Privacy issues | 19.8% |
| Lack of domain expert input | 19.6% |
| Can't afford data science team | 17.8% |
| Multiple ad-hoc environments | 17.5% |
| Limitations of tools | 16.5% |
| Need to coordinate with IT | 16.3% |
| Expectations of project impact | 15.8% |
| Integrating findings into decisions | 13.6% |

Kaggle 2017 The state of data science &machine learning

7,376 responses
Only displaying the top 15 answers. There are 7 answers not shown.

# Time in data projects
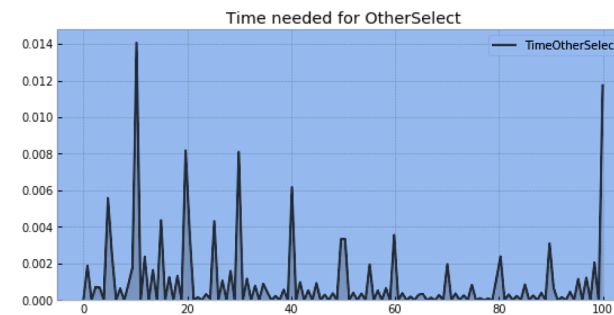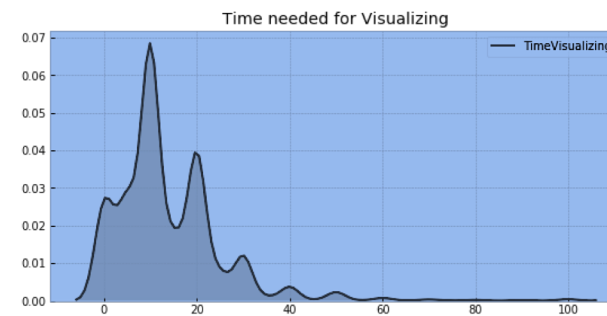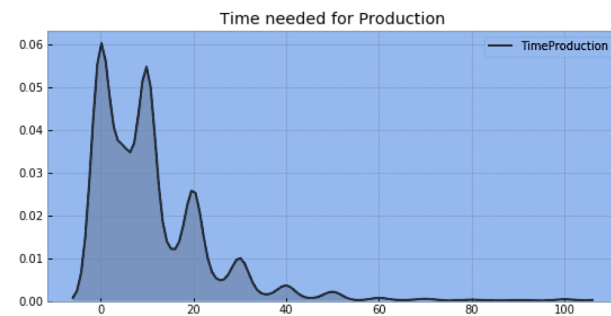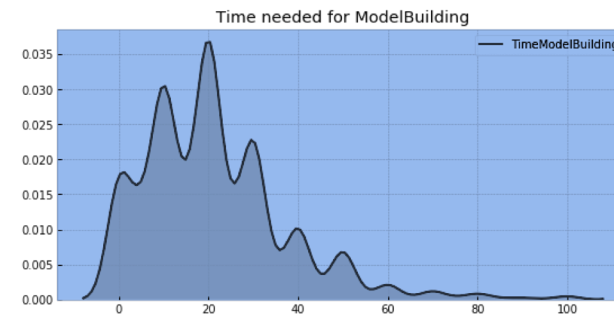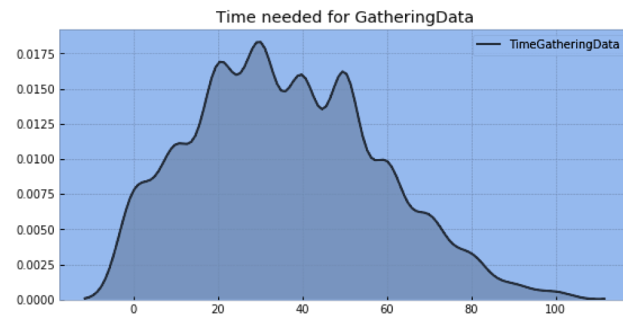
# Thanks for your attention

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