influx/days

Data-driven Decision Making

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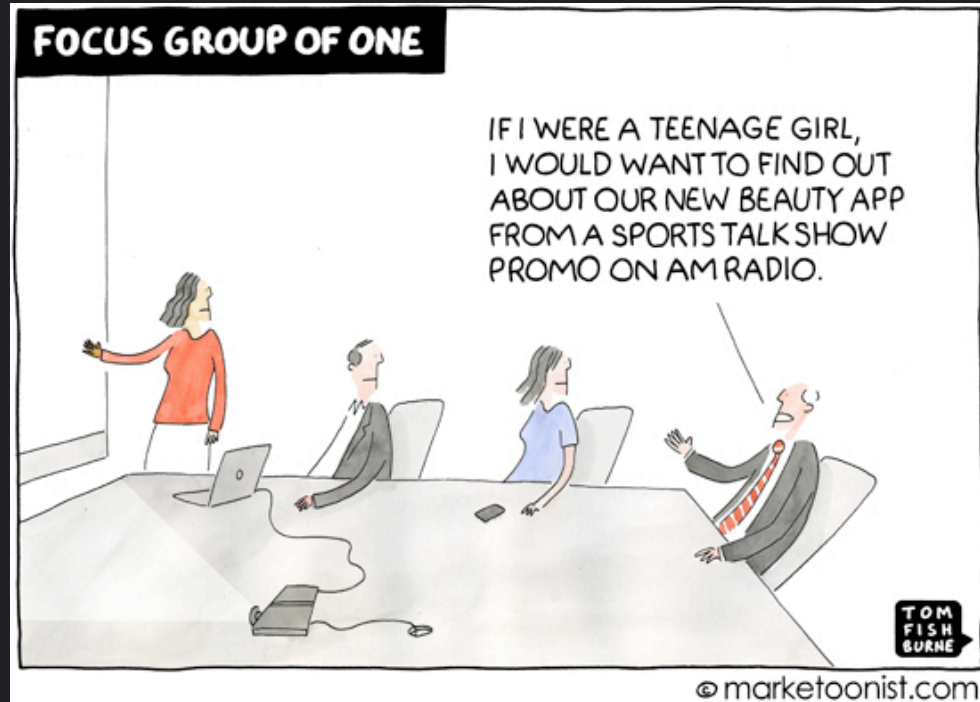Founder & CEO @ Quantia Consulting

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Taking Decisions

- In many organizations decisions are made by "questionable" methodologies

Taking Decisions: HiPPO

Taking Decisions: Flipism

Taking Decisions (cont.)

- In many organizations decisions are made by "questionable" methodologies such as

  - **Hi**ghest **P**aid **P**erson **O**pinion (HiPPO)

  - **Flipism** (all decisions are made by flipping a coin)

- This could have been the **right** approach **in the '70s** …

  - See the "Theory of Bounded Rationality" by Herbert Simons

Taking Decisions (cont.)

- In many organizations decisions are made by the "questionable" methodologies such as
  - **Hi**ghest **P**aid **P**erson **O**pinion (HiPPO)
  - **Flipism** (all decisions are made by flipping a coin)
- This could have been the right approach in the '70s …
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- … but **in the Digital Era** one can dream of **data-driven organization**

Taking Decisions: data-driven organization
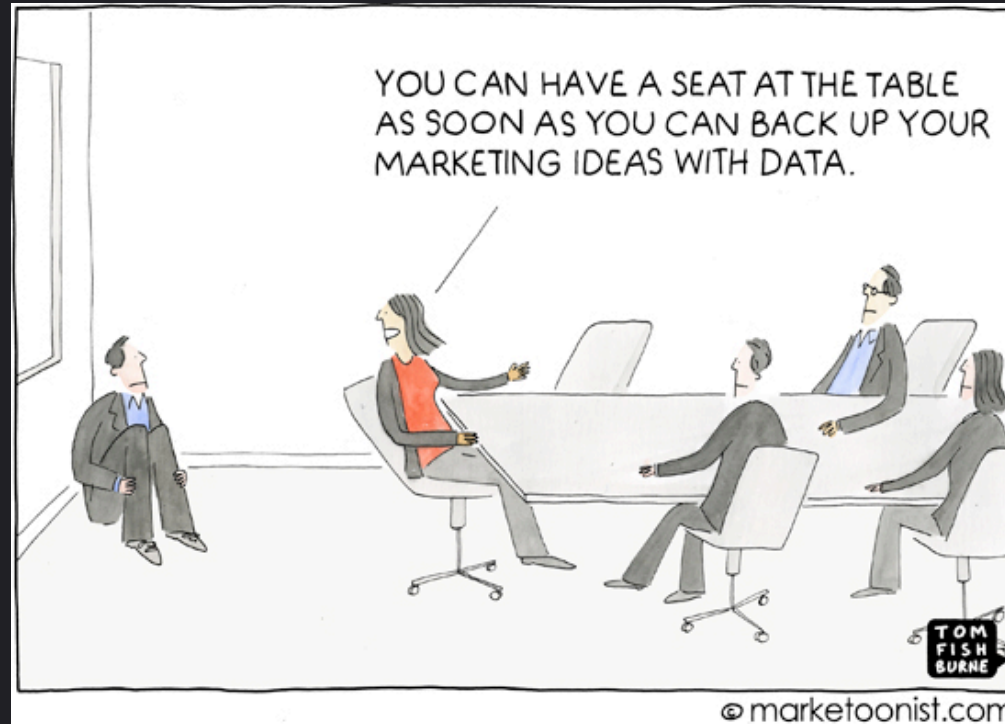
Data-Driven Decisions

Decisions no longer have to be made in the dark or based on gut instinct; they can be **based on evidence, experiments and** more accurate **forecasts**.

-- McKinsey

Data-driven organizations

- **perform better**
  - The data shows where they can streamline their processes

- **are** operationally **more predictable**
  - Data insights fuel current and future decision making

- **are more profitable**
 - Constant improvements and better predictions help to outsmart the competition and improve innovation.

It's a streaming world …

- Off-shore oil operations

- Smart Cities

- Social networks

- Generate **data streams** and **events**!
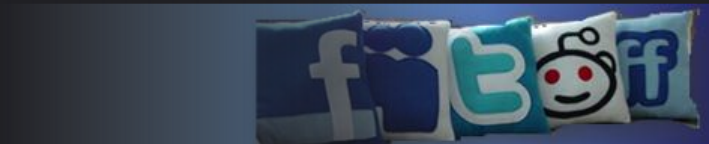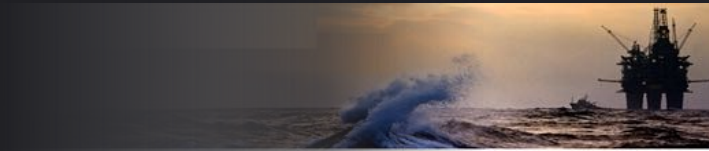
… looking for historical analysis …

- What is the average time to failure
  for the different brands of turbine in use?

- What is the maximum delay of
  the public transport per city district?

- Which content features are correlated
  to high impact posts?

- Requiring the ability to **store** massive
 **timeseries** and **process** them in a scalable way
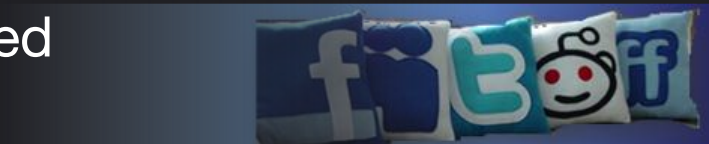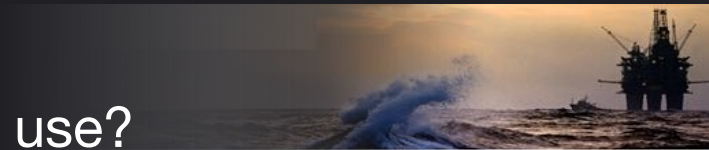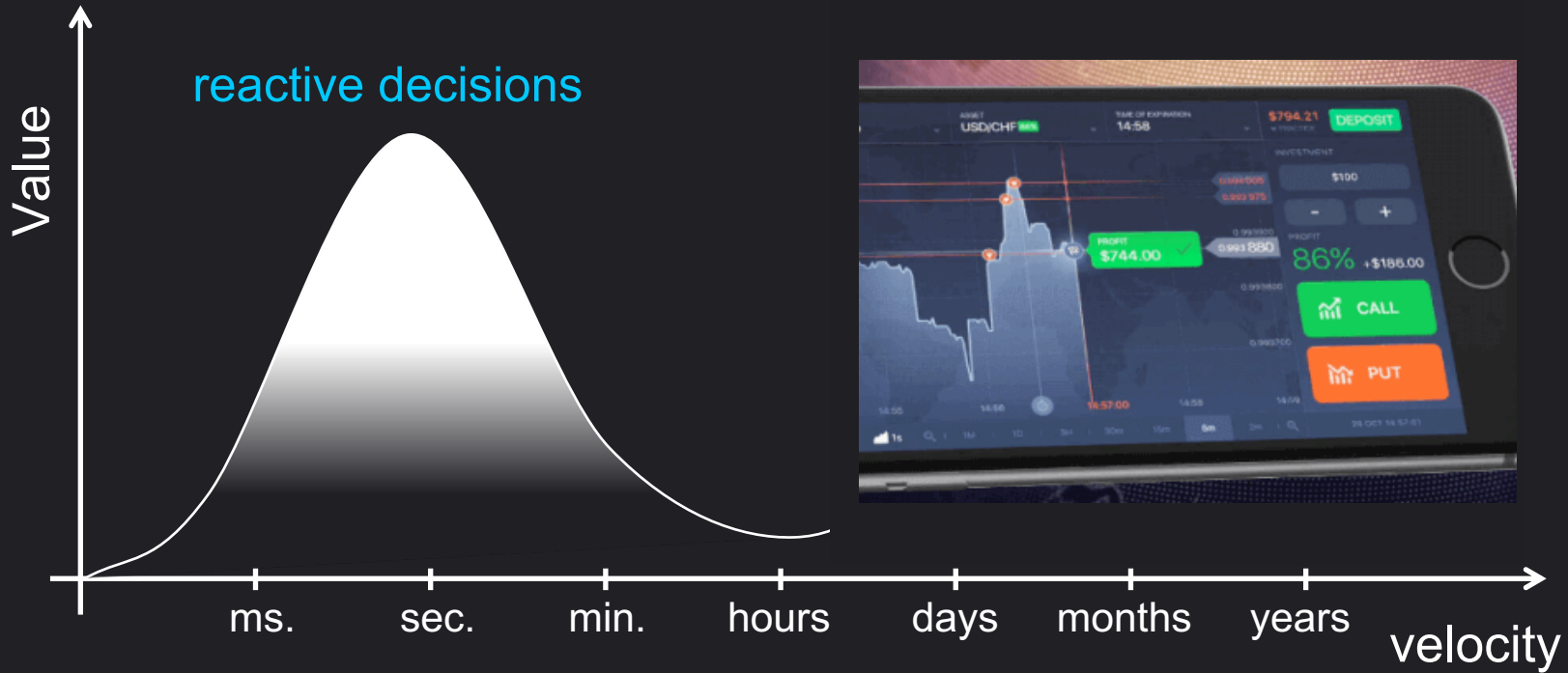
… struggling with reactive answers

- What is the expected time to failure when that turbine starts to vibrate as detected in the last 10 minutes?

- Can I get to that meeting in the next 15 min using public transport?

- Who is driving the discussion about the top 10 emerging topics?

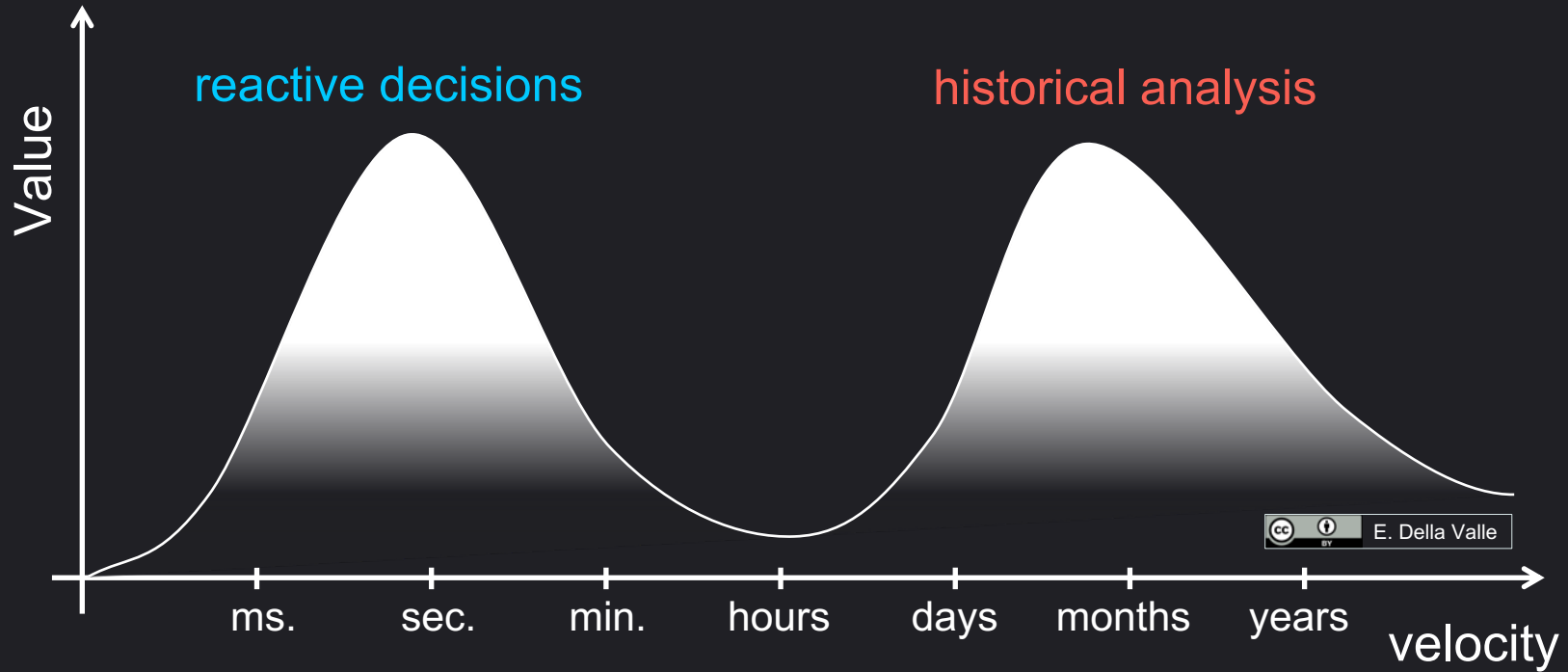- Requiring **continuous processing** and **reactive answers**
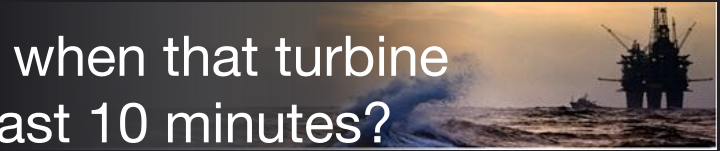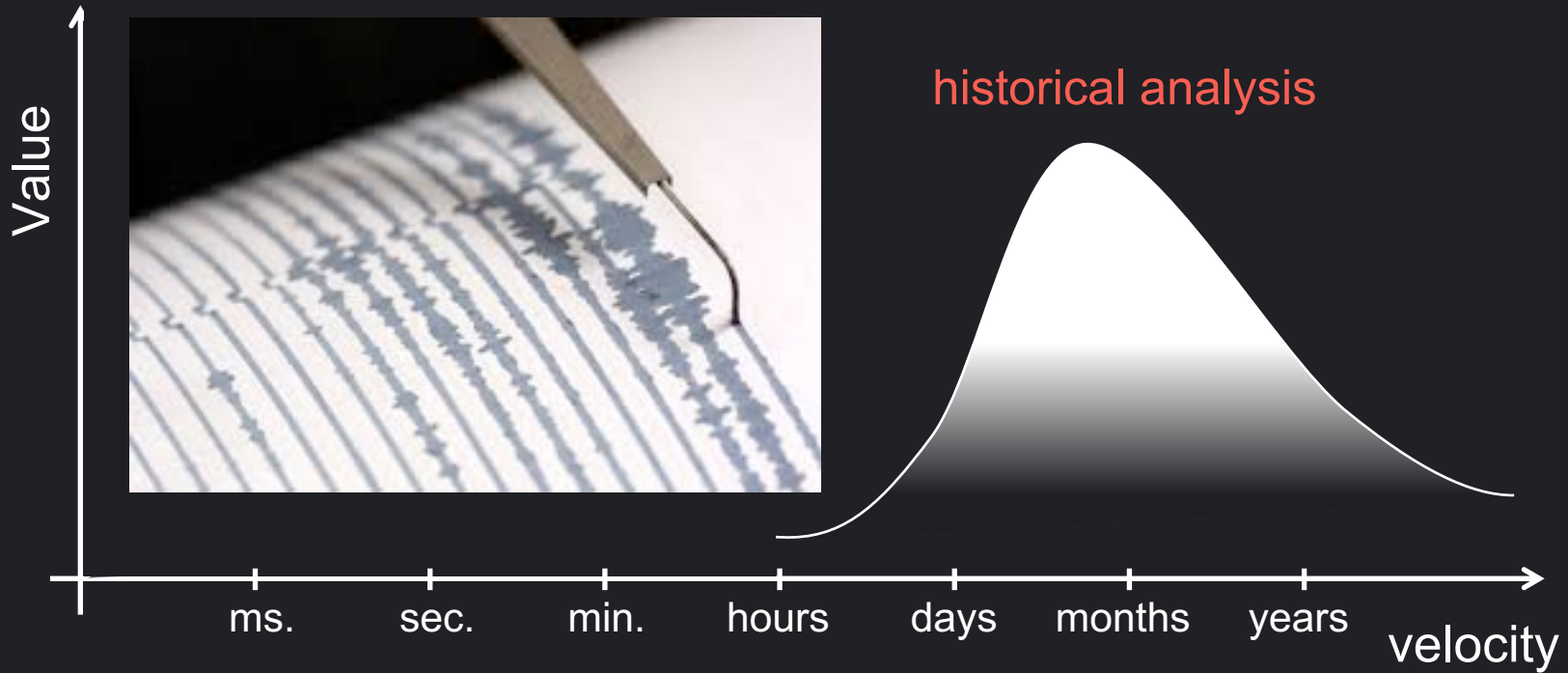
Because there are two moments to extract value from data
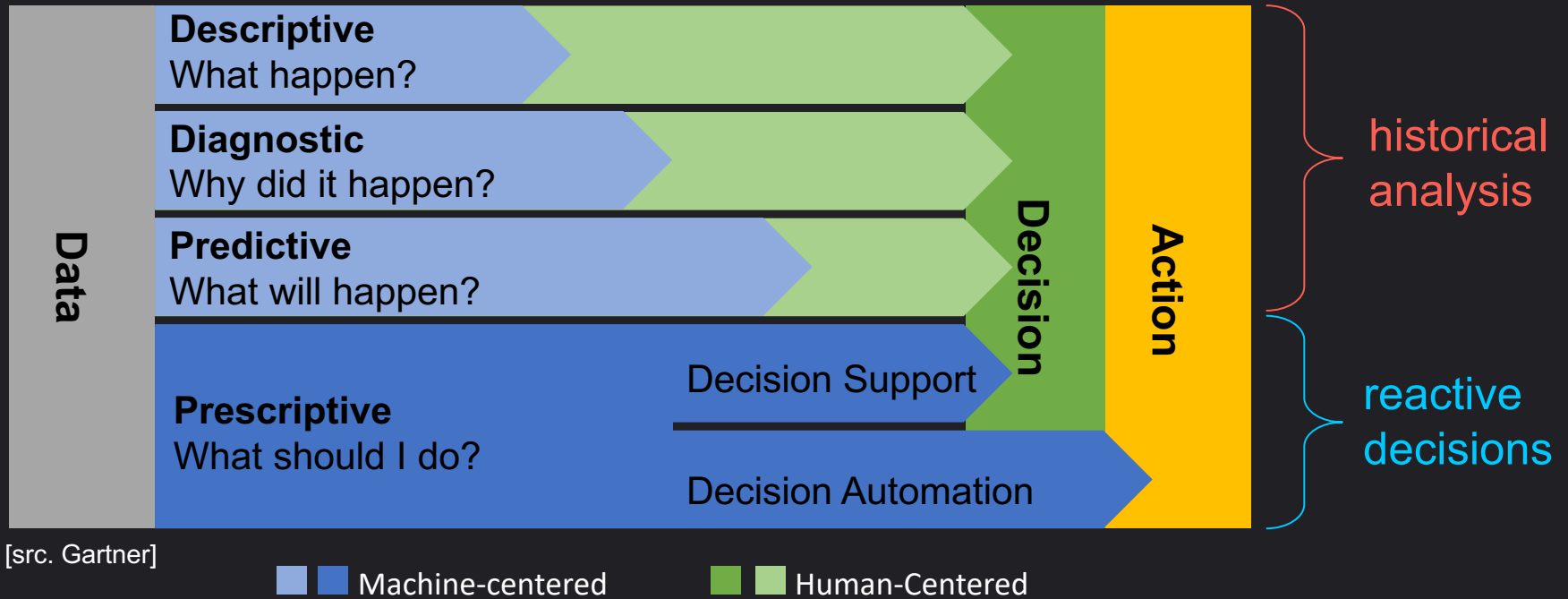
Because there are two moments to extract value from data

Value

reactive decisions

ms.   sec.   min.   hours   days   months   years

velocity

Because there are two moments to extract value from data

Data-driven decision

[src. Gartner]

Descriptive — What happen?
Diagnostic — Why did it happen?
Predictive — What will happen?
Prescriptive — What should I do?

Decision Support
Decision Automation

Data
Decision
Action

historical analysis
reactive decisions

Machine-centered   Human-Centered

Data-driven Decision Making

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