Discovering and analyzing business processes

Prof. Dr. Martin Matzner

Reasons for analyzing business processes

- **Software selection**
  - Understanding of current processes …
  - … is basis for evaluating different software tools

- **Compliance**
  - Understanding of current processes and rules …
  - … is basis for checks

- **Process design**
  - Understanding of current processes …
  - … is basis for identifying improvement potentials

Process analysis

- **Software selection**
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Process analyses start with capturing the current situation

- **Starting point** for process analyses:

  - Process Discovery: What is the as-is process?
  - Process Analysis: What are current problems?

Methods for capturing the current situation

- Discover processes via
    - Interviews
    - Workshops
    - Document analyses
    - Analyses of IT systems
    - Observations

➔ **Time-consuming = expensive**
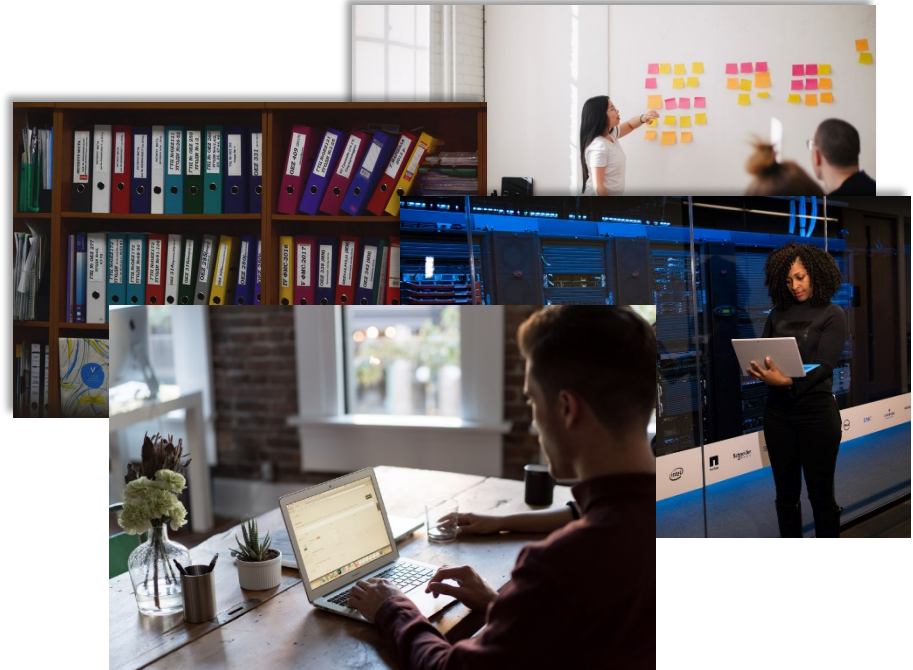
Potential problems with capturing current situation

- Process models might **outdate**
  - e.g., created years ago, but not maintained

- Process models might be **imprecise**
  - e.g., special case or exception has not been considered

- Process models might be **"wrong"**
  - e.g., process work should be perceived as "more demanding / challenging"
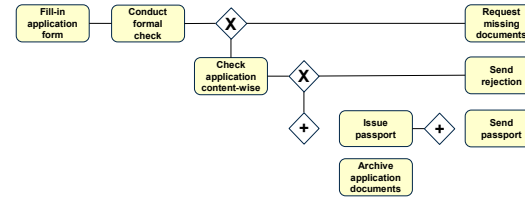
➔ **potentially flawed = potentially wrong decision**

Why *Process Mining*?
Motivation

- **Starting situation**: "Conventional" process analyses
    - What is the as-is process?
    - What are current problems?

- **Problems** w.r.t. costs & quality

IT and *processes*

Processes   **IT infrastructure**   **Logs**

Event-Logs
Data transformation

Applicant	Event type	Timestamp
Jane Doe	Application received	2019-06-15 11:45
Richard Roe	Application received	2019-06-15 12:13
Jane Doe	Formal review of application	2019-06-16 16:20
Jane Doe	Application received	2019-06-16 16:27
Richard Roe	Formal review of application	2019-06-17 14:48
Richard Roe	Content check of application	2019-06-17 14:56

Data transformation

Case	Event type
Jane Doe	Application received – Formal review of application – Application rejected
Richard Roe	Application received – Formal review of application – Content check of application

What is *Process Mining*?

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Discovery

Conformance

Enhancement
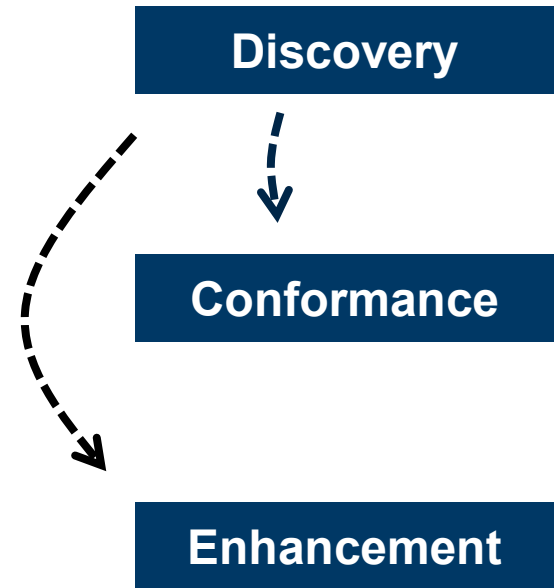
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  - Process Analysis: What are current problems?

- **Problems** w.r.t. costs & quality

- **Approach:** event-based data analyses
  - *"Let the process speak for itself"*

[1]Wil van der Aalst. 2012. Process Mining: Overview and Opportunities. ACM Trans. Manage. Inf. Syst. 3, 2, Article 7 (July 2012), p.2

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