

Defining & Re-designing

Process Redesign



Friedrich-Alexander University, Chair of Digital Industrial Service Systems

Session Structure

Learning Objectives – Process Redesign

What are the perspectives of a business process

How each of the perspectives can be an inspiration of process improvement

How the redesign heuristics can be a reference to approach process improvement

How the advancement of technology further the possibilities of process improvement

Defining & Re-designing

Process Redesign



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Process Redesign



Process Analysis

Perspectives
of a Business
Process

Process Redesign



Process Analysis



Process Redesign

Perspectives
of a Business
Process

Process Redesign



Process Analysis



Process Redesign

- ✓ Insights that process performance is not optimal

Perspectives
of a Business
Process

Process Redesign



Process Analysis



Process Redesign

- ✓ Insights that process performance is not optimal
- ✓ Actions for improving the process

Perspectives
of a Business
Process

Process Redesign



Process Analysis



Process Redesign

- ✓ Insights that process performance is not optimal
- ✓ Actions for improving the process
- ★ Derive clear actions from the insights → lasting effect

Perspectives
of a Business
Process

Process Redesign



Process Analysis



Process Redesign

- ✓ Insights that process performance is not optimal
- ✓ Actions for improving the process
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1) Different perspectives of a business process

Perspectives
of a Business
Process

Process Redesign



Process Analysis



Process Redesign

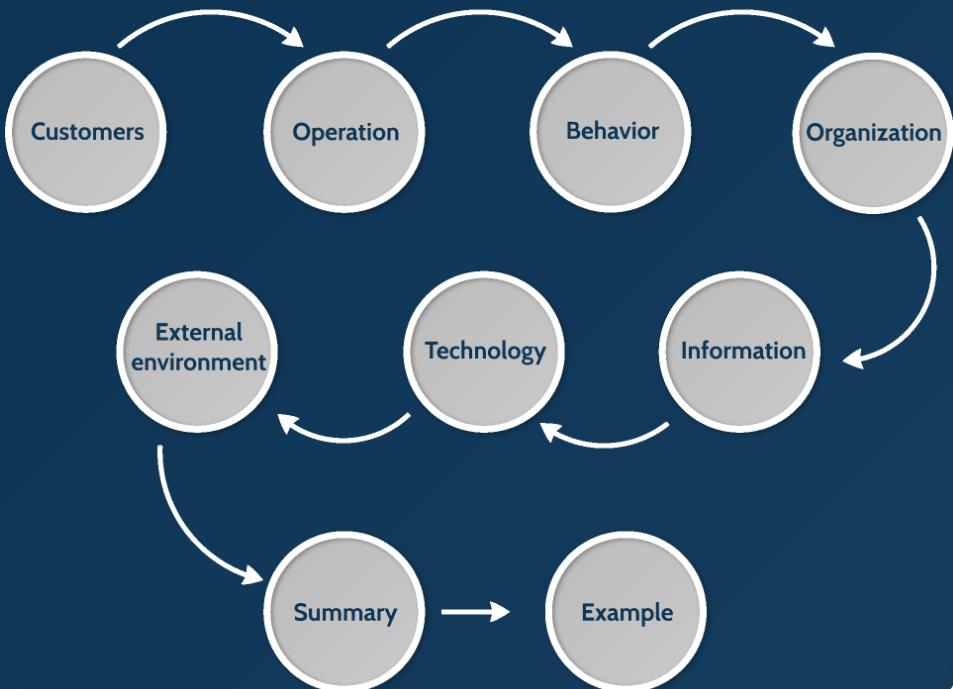
- ✓ Insights that process performance is not optimal
- ✓ Actions for improving the process
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1) Different perspectives of a business process

2) Ways to redesign processes

Perspectives
of a Business
Process

Perspectives of a Business Process



Perspectives of a Business Process - Customers



Customers

Perspectives of a Business Process - Customers



Customers

- Expect a certain outcome

Perspectives of a Business Process - Customers



- Expect a certain outcome
- Internal/External

Customers

Perspectives of a Business Process - Customers



Customers

- Expect a certain outcome
 - Internal/External
- e.g.
- Amazon's sales process:
you are the **external** customer

Perspectives of a Business Process - Customers



Customers

- Expect a certain outcome
- Internal/External

e.g.

- Amazon's sales process:
you are the **external** customer
- IT service process:
customers are **within** the organization

Perspectives of a Business Process - Customers



Customers

- Expect a certain outcome
- Internal/External

e.g.

- Amazon's sales process:
you are the **external** customer
- IT service process:
customers are **within** the organization

★ Beware of customer's expectation
towards the process & outcome

Perspectives of a Business Process - Operation



Operation

Perspectives of a Business Process - Operation



Operation

- Defines how a process is designed

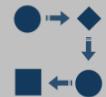
Perspectives of a Business Process - Operation



Operation

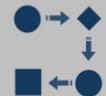
- Defines how a process is designed
- ★ Which process steps are occurring

Perspectives of a Business Process - Behavior



Behavior

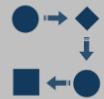
Perspectives of a Business Process - Behavior



Behavior

- How the process steps are executed

Perspectives of a Business Process - Behavior



Behavior

- How the process steps are executed
 - e.g.
 - Order of the steps

Perspectives of a Business Process - Organization



Organization

Perspectives of a Business Process - Organization



Organization

- Departments, groups or users involved in the process

Perspectives of a Business Process - Information



Information

Perspectives of a Business Process - Information



Information

- Passing information through
the execution of a process

Perspectives of a Business Process - Information



- Passing information through the execution of a process
- ★ Information gained in each step has to be forwarded

Information

Perspectives of a Business Process - Technology



Technology

Perspectives of a Business Process - Technology



Technology

- Support the Information perspective

Perspectives of a Business Process - Technology



Technology

- Support the Information perspective
e.g.
 - Information systems
 - Machines used in manufacturing

Perspectives of a Business Process - External environment



External
environment

Perspectives of a Business Process - External environment



External
environment

- The environment the process is situated in

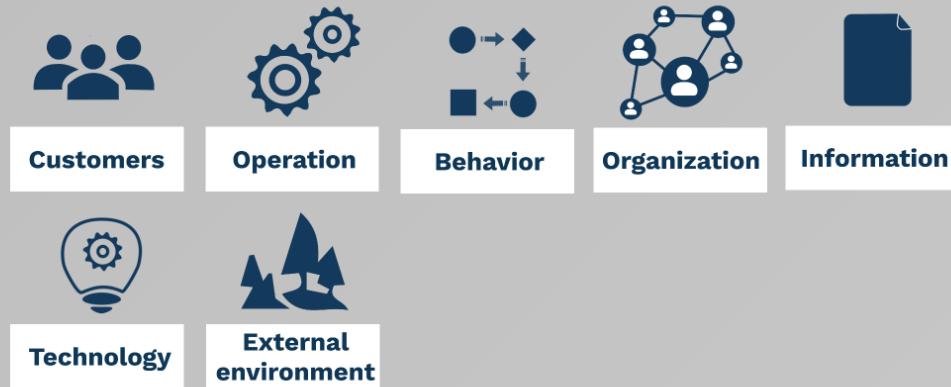
Perspectives of a Business Process - External environment



External
environment

- The environment the process is situated in
 - e.g.
 - Different legal obligations in different countries

Perspectives of a Business Process - Summary



- ★ All 7 perspectives can be a starting point for process improvement!

Perspectives of a Business Process - Example



Perspectives of a Business Process - Example

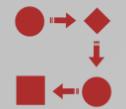
e. g. A process takes longer than expected



Customers



Operation



Behavior



Organization



Information



Technology



External environment

Perspectives of a Business Process - Example

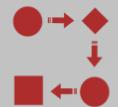
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Customers



Operation



Behavior



Organization



Information

Better manage
the customer
expectations



Technology



External
environment

Perspectives of a Business Process - Example

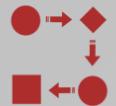
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Better manage
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Take out
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Technology



External
environment

Perspectives of a Business Process - Example

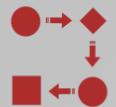
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Customers



Operation



Behavior



Organization



Information

Better manage
the customer
expectations

Take out
process steps

Re-arrange
activities



Technology



External
environment

Perspectives of a Business Process - Example

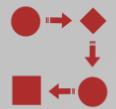
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Customers



Operation



Behavior



Organization



Information

Better manage
the customer
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Take out
process steps

Re-arrange
activities

Centralize
process in one
department/
Hire more
skills workers



Technology



**External
environment**

Perspectives of a Business Process - Example

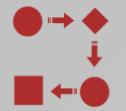
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Customers



Operation



Behavior



Organization



Information

Better manage
the customer
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Take out
process steps

Re-arrange
activities

Centralize
process in one
department/
Hire more
skills workers

Model the
information
flow



Technology



**External
environment**

Perspectives of a Business Process - Example

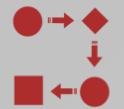
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Customers



Operation



Behavior



Organization



Information

Better manage the customer expectations

Take out process steps

Re-arrange activities

Centralize process in one department/
Hire more skills workers

Model the information flow



Technology



External environment

Implement new IT systems

Perspectives of a Business Process - Example

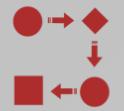
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Customers



Operation



Behavior



Organization



Information

Better manage the customer expectations

Take out process steps

Re-arrange activities

Centralize process in one department/
Hire more skills workers

Model the information flow



Technology



External environment

Implement new IT systems

Invite employees to take decisions autonomously

Defining & Re-designing

Process Redesign



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How to Start Improving



Process Analysis



Process Redesign

**Redesign
Heuristics**

How to Start Improving



- ★ Based on the results, not by questioning "Why" at the start

Redesign
Heuristics

How to Start Improving



- ★ Based on the results, not by questioning "Why" at the start
 - good way, best way, or even a reasonable way?

Redesign
Heuristics

How to Start Improving



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 - new perspective for a better way?

Redesign
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How to Start Improving



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"Why can we maybe not do it in a better way but have to do it as we do it now?"

Redesign
Heuristics

How to Start Improving



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"Why can we maybe not do it in a better way but have to do it as we do it now?"

- ★ Do not agree on the status quo before thinking ahead!

Redesign
Heuristics

How to Start Improving



- ★ Based on the results, not by questioning "Why" at the start
 - good way, best way, or even a reasonable way?
 - new perspective for a better way?



"Why can we maybe not do it in a better way but have to do it as we do it now?"

- ★ Do not agree on the status quo before thinking ahead!
- ★ **Redesign Heuristics is a good starting point**

Redesign
Heuristics

Redesign Heuristics - Examples



Redesign Heuristics - 1

Example 1: Task Elimination 

Redesign Heuristics - 1

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- Eliminate steps that don't add value

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Redesign Heuristics - 1

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★ Consider value by looking at the trade-offs

Redesign Heuristics - 2

Example 2: Centralization → ● ←

- Have just one department responsible for certain activities in the process
- Decrease the need for communication between many different stakeholders

Redesign Heuristics - 3

Example 3: Parallelism → →

Redesign Heuristics - 3

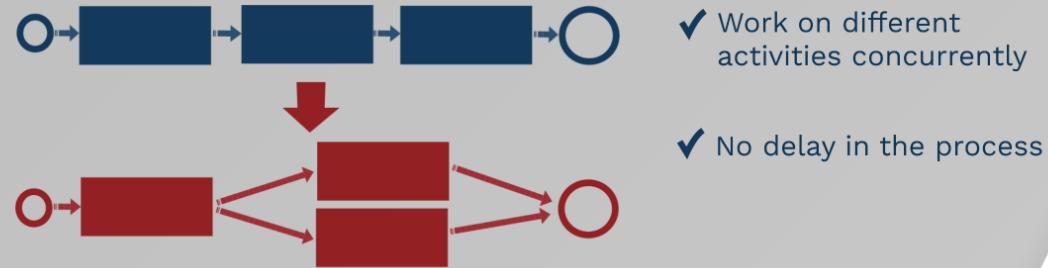
Example 3: Parallelism → →

- Speed up a process
- Steps that are done in sequential order
but do not rely on each other → execute in parallel

Redesign Heuristics - 3

Example 3: Parallelism → →

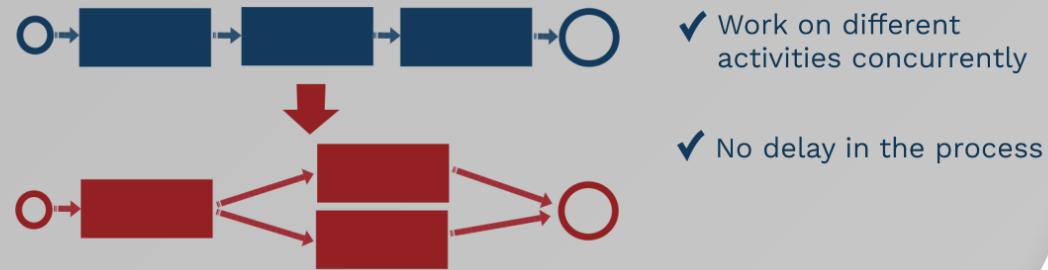
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Redesign Heuristics - 3

Example 3: Parallelism → →

- Speed up a process
- Steps that are done in sequential order but do not rely on each other → execute in parallel



- ✓ Work on different activities concurrently
- ✓ No delay in the process

★ Choice depends on your overall objective and organizational context

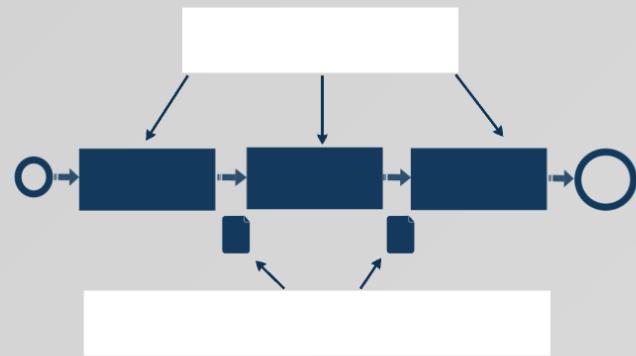
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Process Redesign



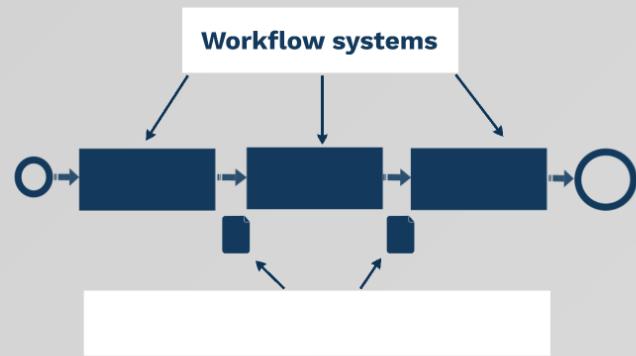
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Technology Drives Process Improvement



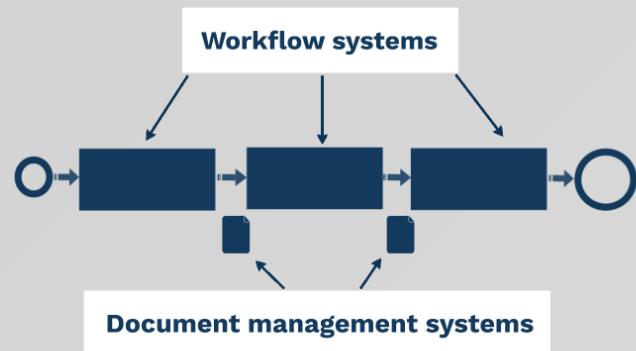
Robotic
Process
Automation
(RPA)

Technology Drives Process Improvement



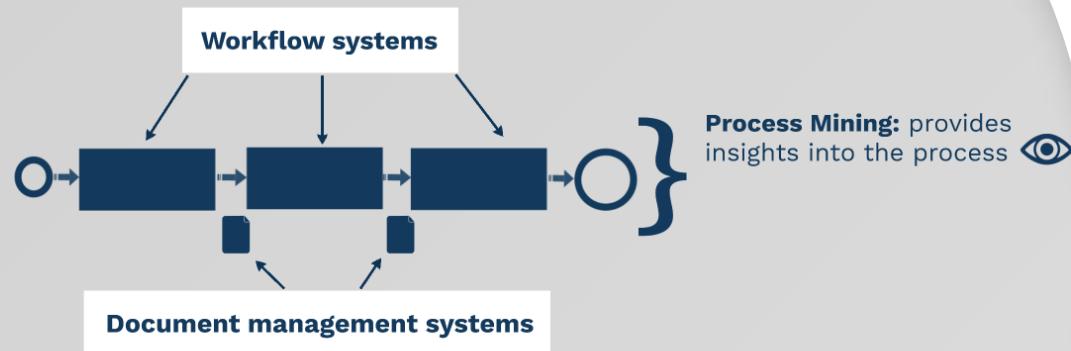
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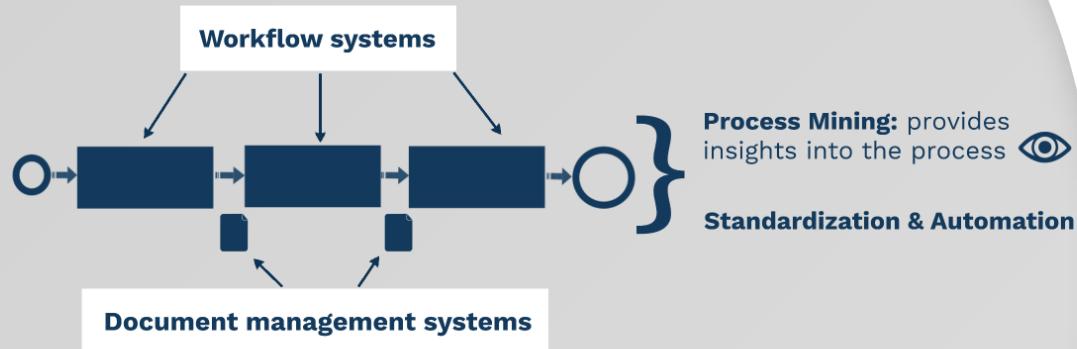


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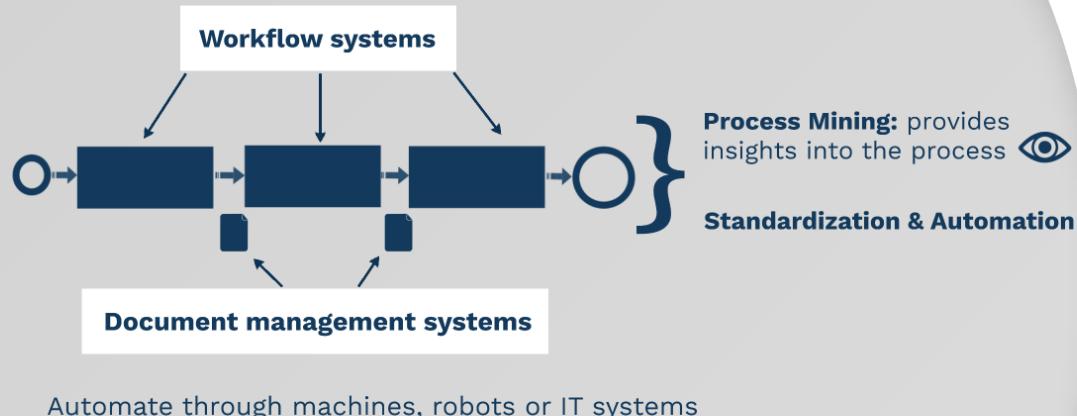
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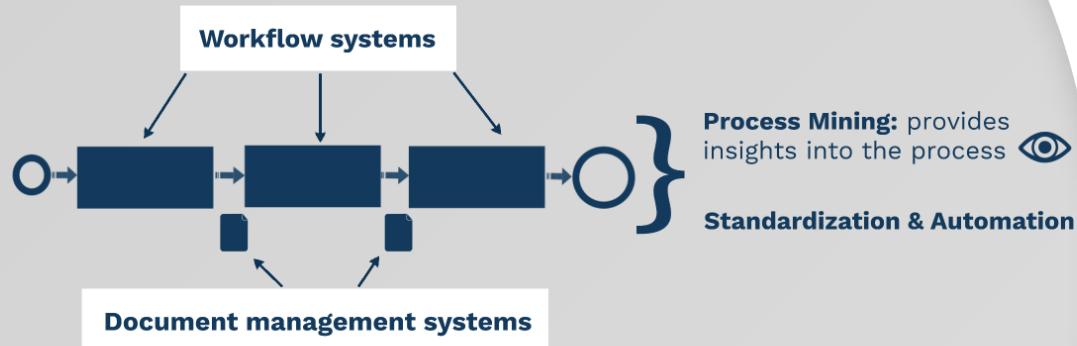


Technology Drives Process Improvement



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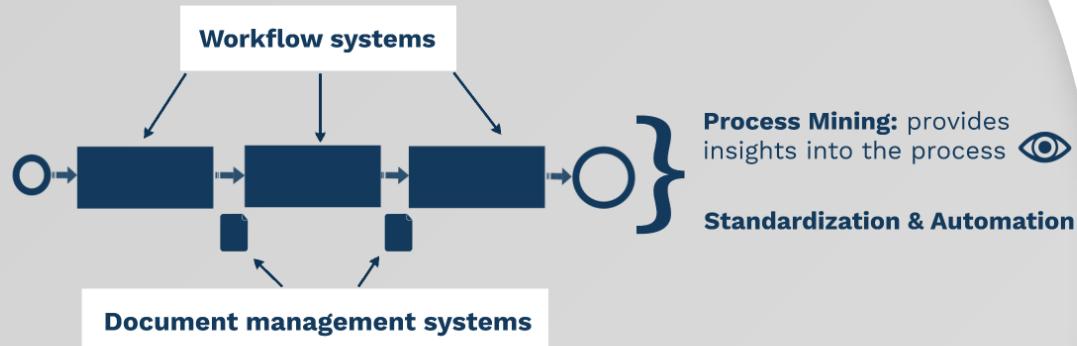


Automate through machines, robots or IT systems

Human: cognitive abilities to deal with uncertain situations



Technology Drives Process Improvement



Automate through machines, robots or IT systems

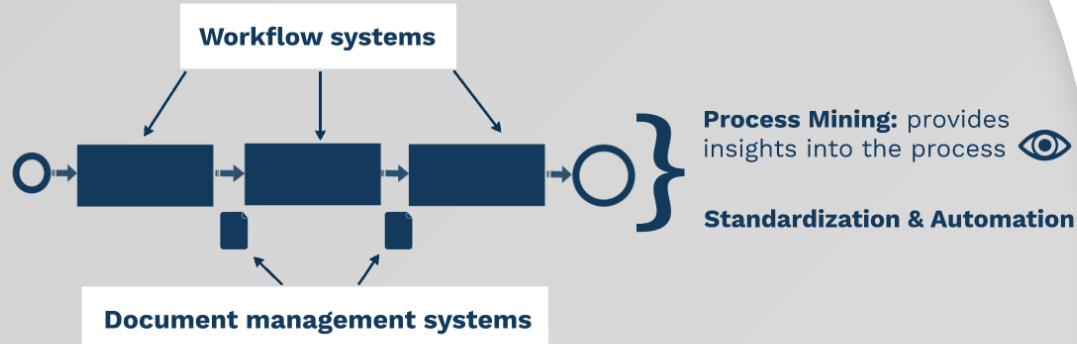
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Machines:

✓ repetitive tasks with static input and output

Robotic
Process
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Technology Drives Process Improvement



Automate through machines, robots or IT systems

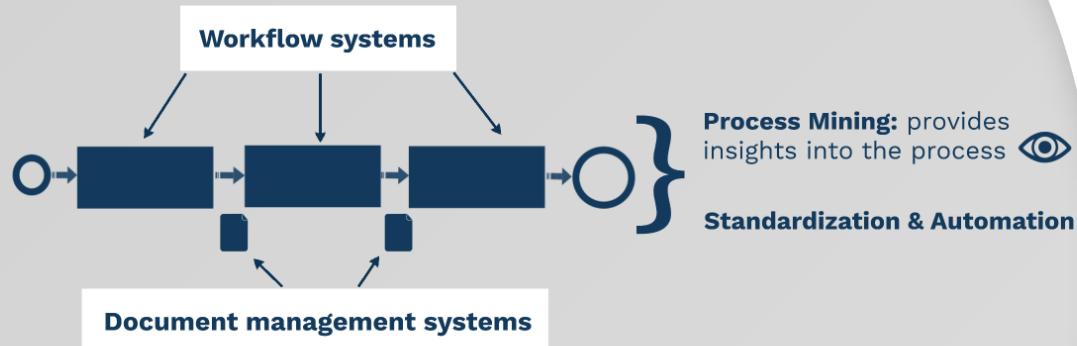
Human: cognitive abilities to deal with uncertain situations

Machines:

- ✓ repetitive tasks with static input and output
- ✓ run 24/7



Technology Drives Process Improvement



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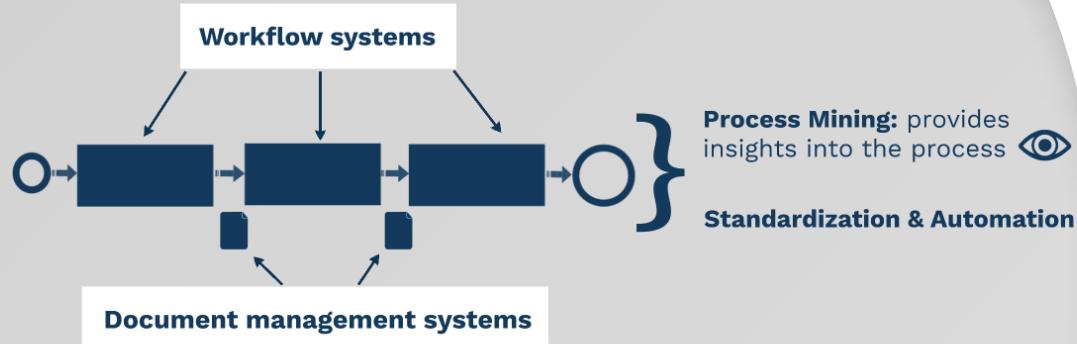
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Machines:

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- ✓ run 24/7
- ✓ less error prone when processing information

Robotic
Process
Automation
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Technology Drives Process Improvement



Automate through machines, robots or IT systems

人群 Human: cognitive abilities to deal with uncertain situations



Machines:

- ✓ repetitive tasks with static input and output
- ✓ run 24/7
- ✓ less error prone when processing information

★ Robotic Process Automation (RPA)



Robotic Process Automation (RPA)



Software robots

"RPA is an umbrella term for tools that operate on the user interface of other computer systems in the way a human would do"

(van der Aalst, Bichler, & Heinzl, 2018)

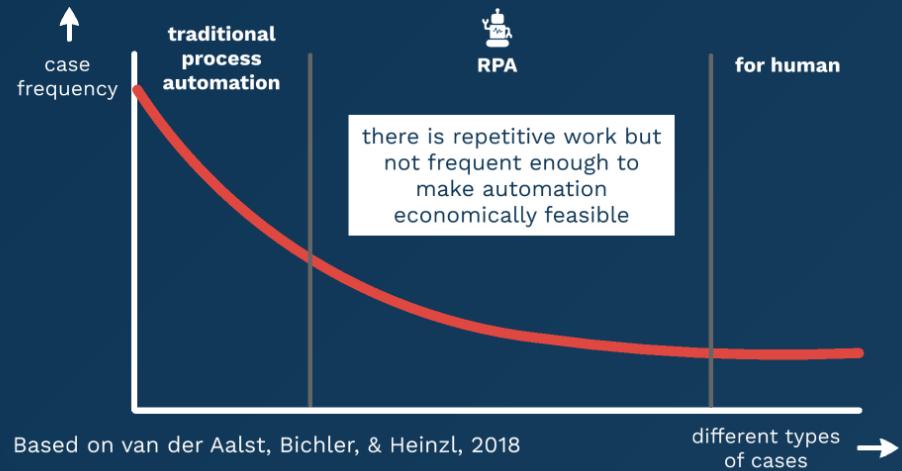
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Summing Up

What do I do
when I find an issue?

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What do I do
when I find an issue?

- Depends on targeted process & objective

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- Redesign Heuristics: how to approach process improvement

Summing Up

What do I do
when I find an issue?

- **Depends on targeted process & objective**
- **Redesign Heuristics: how to approach process improvement**
- **New technologies: increase efficiency & support information flow**

Summing Up

What do I do
when I find an issue?

- **Depends on targeted process & objective**
- **Redesign Heuristics: how to approach process improvement**
- **New technologies: increase efficiency & support information flow**
- **Consider benefits, costs and risks of implementation**

Defining & Re-designing

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References

1. Dumas, M., Rosa, M. L., Mendling, J., & Reijers, H. A. (2013). Fundamentals of Business Process Management. Heidelberg: Verlag.
2. van der Aalst, W. M. P., Bichler, M., & Heinzl, A. (2018). Robotic Process Automation. *Business & Information Systems Engineering*, 60(4), 269–272.

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