# Explorative BPM: Lecture 1

# Introduction to Business Process Management (BPM)

UNIVERSITÄT LIECHTENSTEIN

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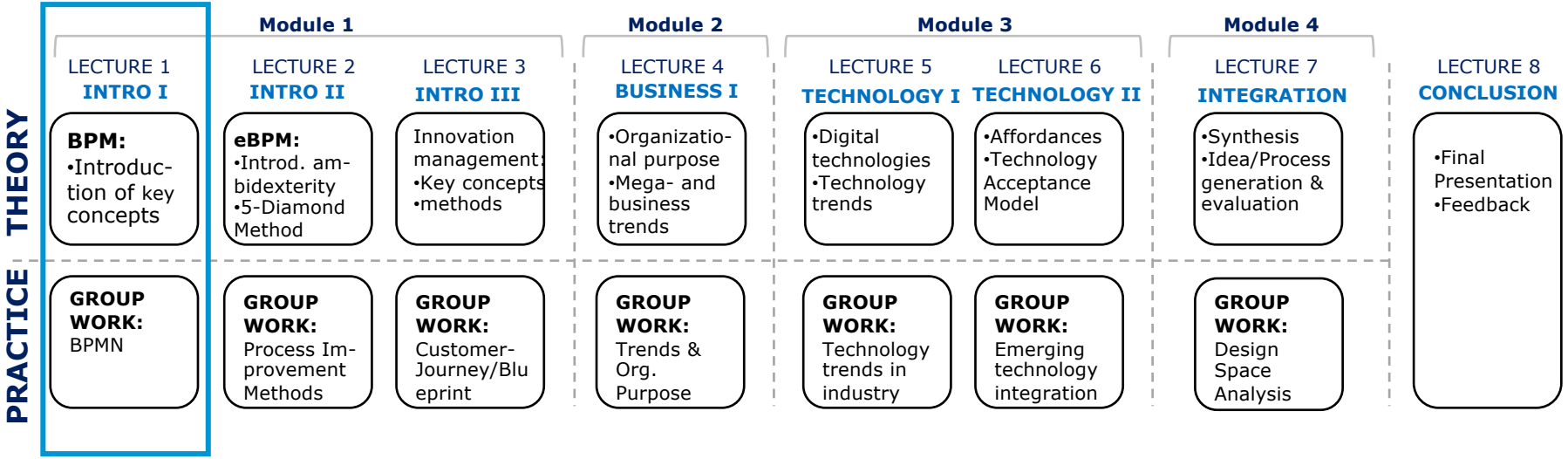
Lecturer:

Encouraged by ERASMUS+ (EU Funding 2018-1-LI01-KA203-000114
„Reference Module Design for Explorative Business Process Management“)

# Today: Lecture 1 – Introduction to (BPM)



# Questions to be answered

**What is a Business Process?**

**What is Business Process Management (BPM)?**

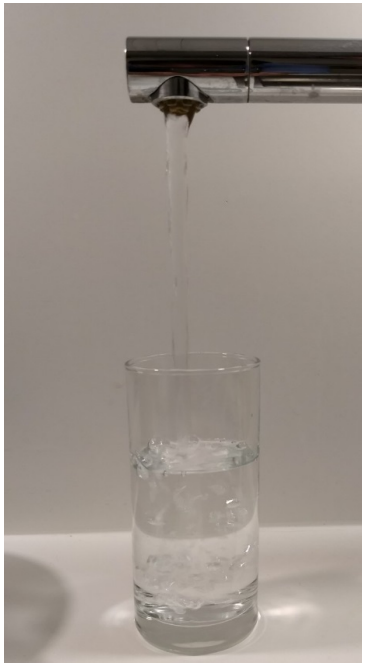
**How can Business Processes be communicated?**

# Is this glass half empty or half full?

http://aeon.co/ideas/which-is-more-fundamental-processes-or-things

# Processes are into dynamics

Thanks Dr. Mieke Jans for offering her hand



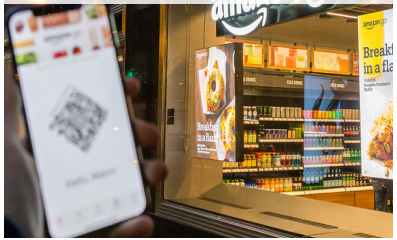
time

# The redesign of business processes


**Transactional Process Change**

Self-checkout counter

**Transformational Process Change**




No counter (Amazon Go)

# What is a Business Process?

**Definition**

## Business Process

A business process is a collection of related **events, activities and decisions**, that involve a number of **actors and resources**, and that collectively lead to an outcome that is of **value** to an organization or its **customers**.

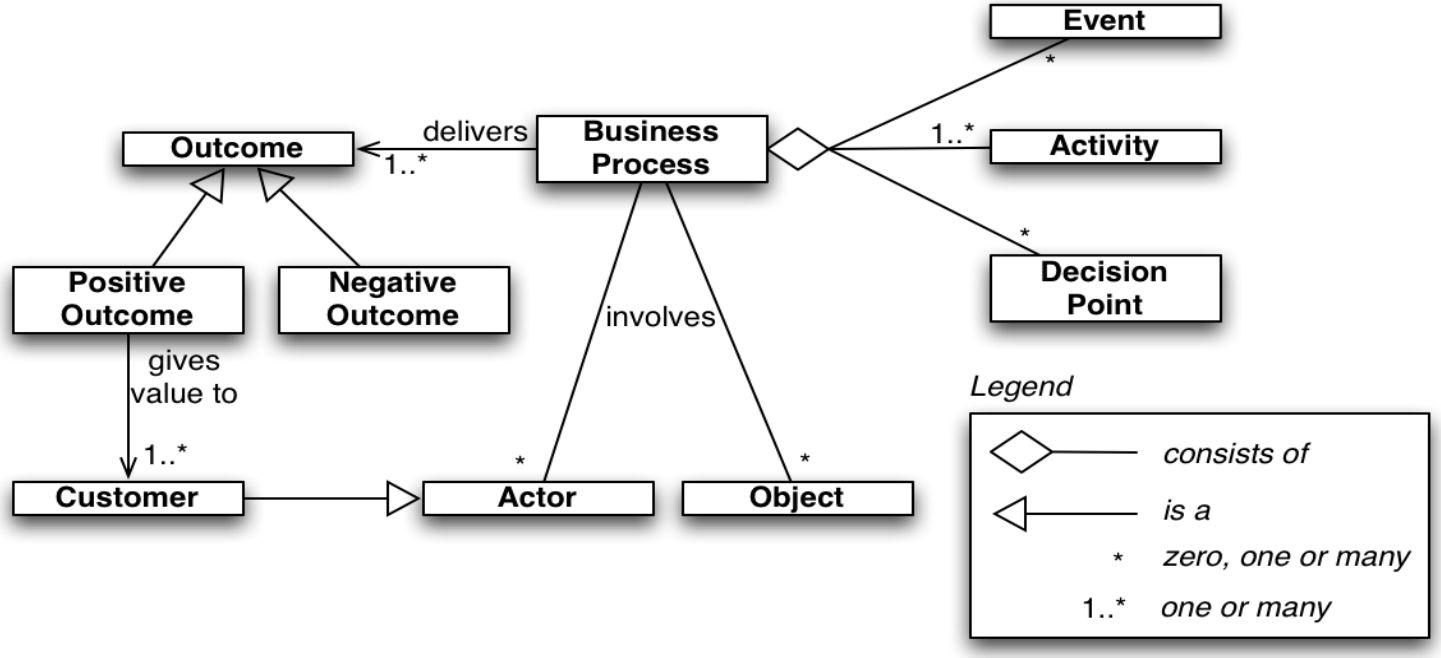
- Business processes are what companies do whenever they deliver a service or a product to customers
- A company can outperform another company offering similar kinds of service if it has better processes and/or executes them better

Dumas et al. 2018

 (Dumas et al. 2018)

Erasmus+ AIBA

# Elements of a Business Process




(Dumas et al. 2018)

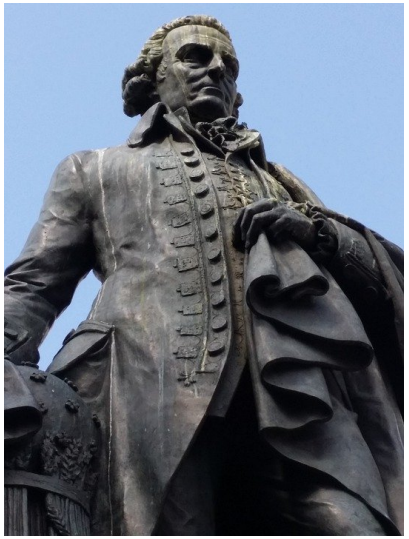
# Processes and division of labour

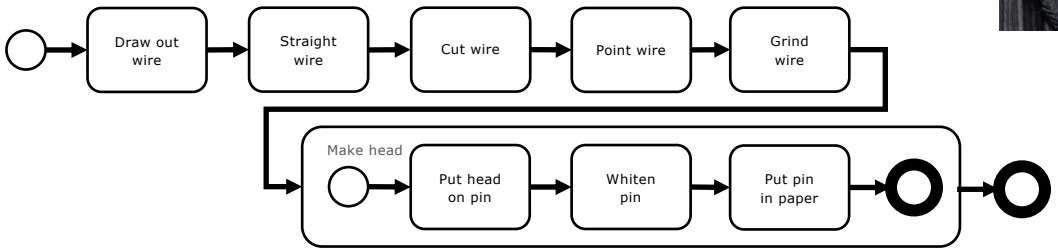
Smith, 1776

To take an example, the trade of a pin-maker: But in the way in which this business is now carried on, it is divided into a number of branches:

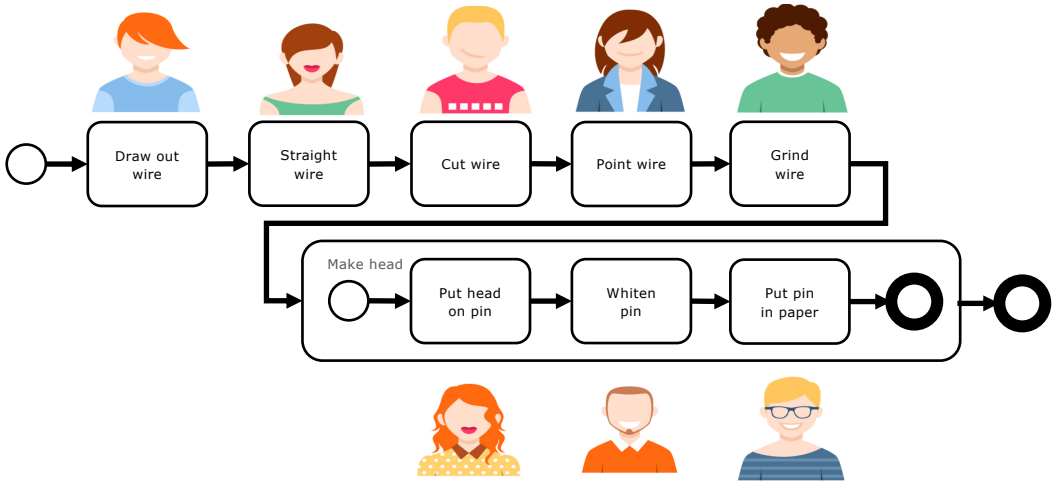
- One man draws out the wire;
- another straights it;
- a third cuts it;
- a fourth points it;
- a fifth grinds it at the top for receiving the head;
- to make the head requires three operations;
  - to put it on is a peculiar business;
  - to whiten the pins is another;
  - to put them into the paper; …

[…] making a pin is, in this manner, divided into about 18 distinct operations.

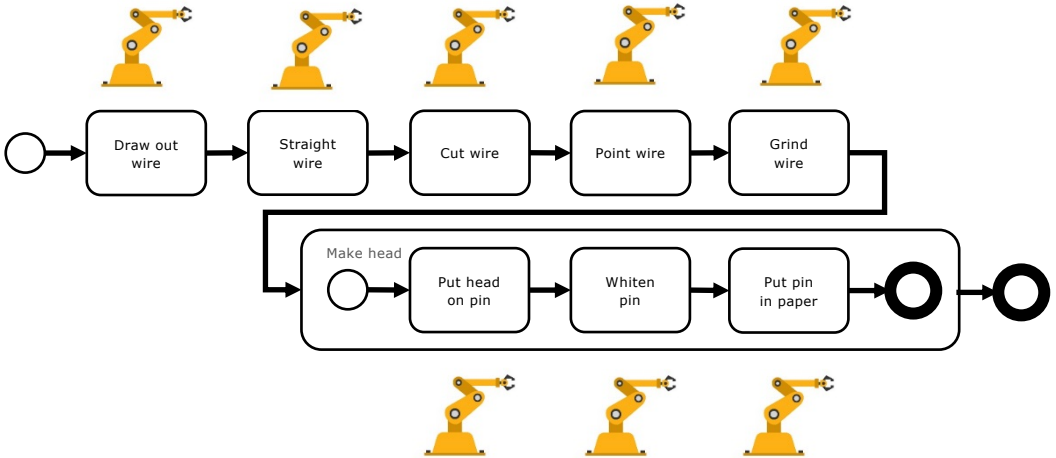




# Division of labour



# Division of labour



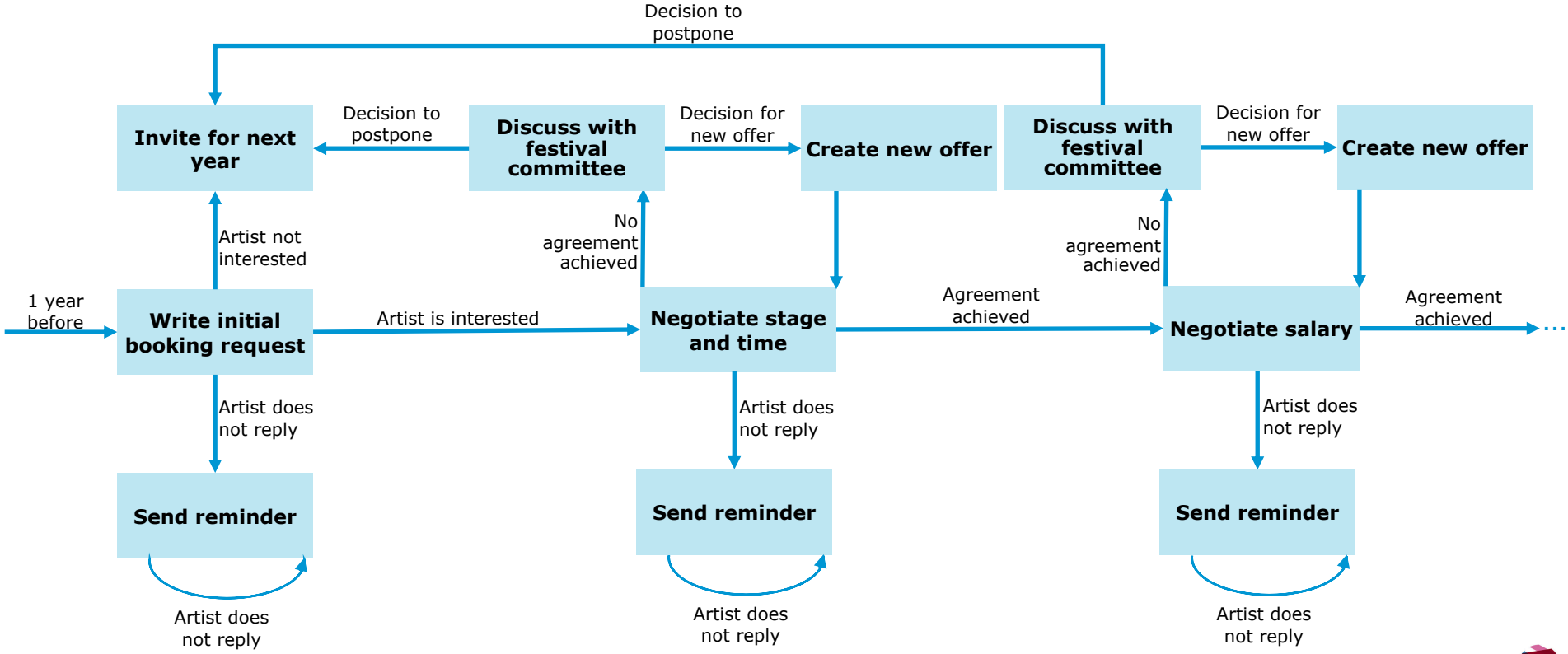
# Processes are ubiquitous

Which processes associated with a music festival can you identify?


- Setting up, maintaining, and dismounting the stage
- Booking of the artists
- Suppling new drinks (organizer)
- Purchasing a drink (customer)
- Picking-up the garbage
- Controlling admission
- Finding the tent

… what else?

# “Booking of the artists“ process



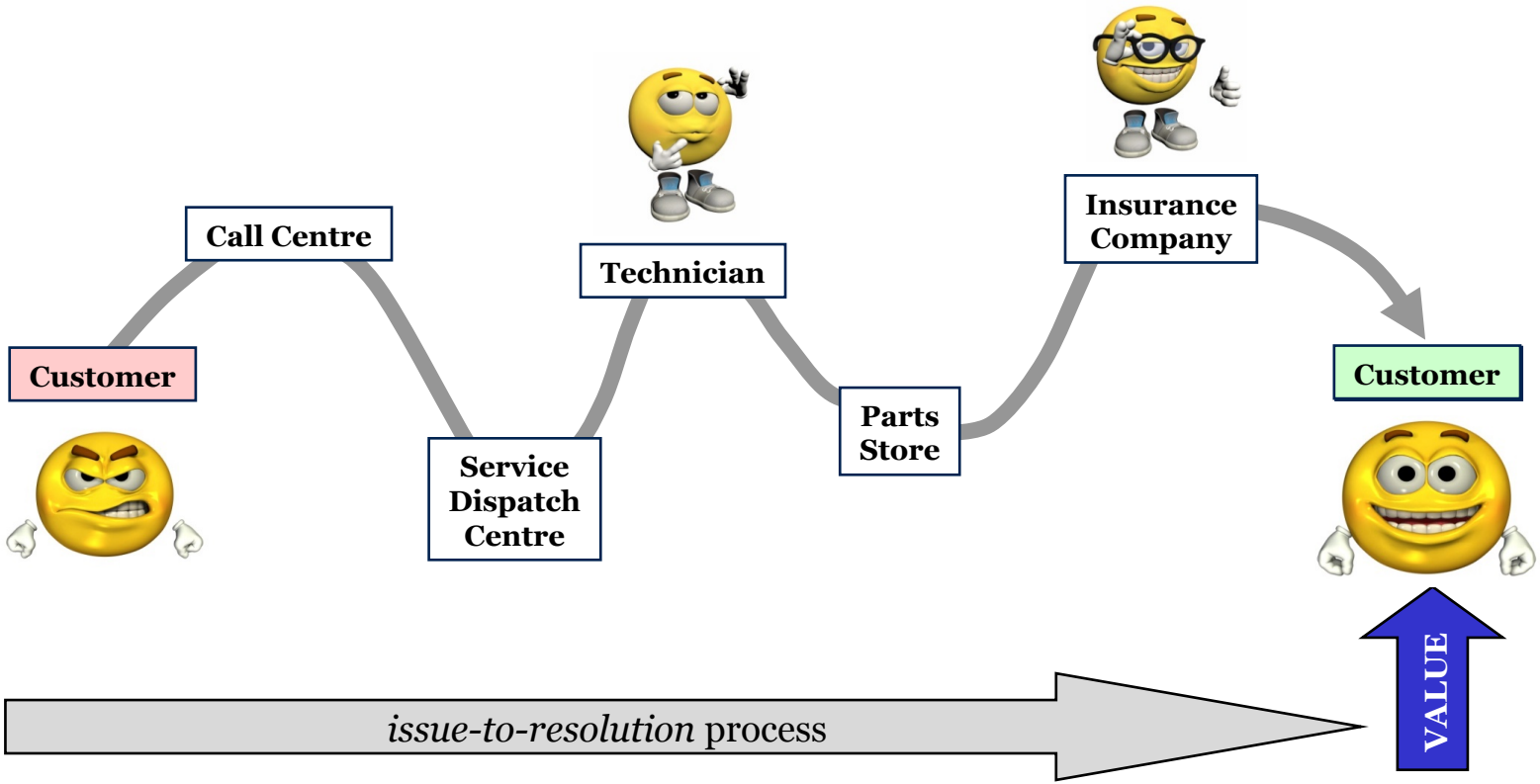
# Processes and Outcomes

- Every process leads to one or several outcomes, positive or negative
  - Positive outcomes deliver value
    - Delivers value to the involved actors
  - Negative outcomes reduce value
    - Involved actors do not receive any value

- Issue-to-resolution process' outcomes:
  - Issue repaired without technician intervention
  - Issue repaired with minor technician intervention
  - Issue repaired and fully covered by warranty
  - Issue repaired and partly covered by warranty
  - Issue repaired but not covered by warranty
  - Issue not repaired (customer withdrew request)

(Dumas et al. 2018)

# „My washing machine doesn‘t work…“



# Business Process vs. Process Instance

- Business process
- Activity
- Business process attributes

Car Assembly Process

Mount doors

Car body number,
(Buyer),
Car color

- Case (process instance)
- Instance activity (work item)
- Case attributes

Car Assembly Case 3324

Mount doors on 3324

Car body number 3324,
Buyer Henry Ford,
Car color white



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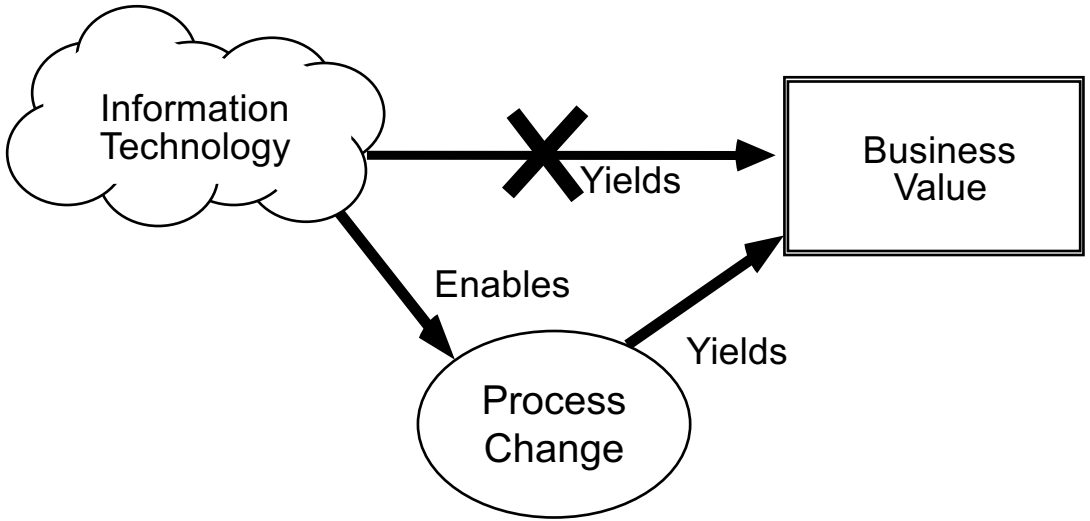
# Questions to be answered

**What is a Business Process?**

**What is Business Process Management (BPM)?**

**How can BPM be put into practice?**

# Why Business Process Management?



# Why Business Process Management?

*"The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency.*

*The second is that automation applied to an inefficient operation will magnify the inefficiency."*

https://flic.kr/p/V3n8mL

(Shaw 2007)

# What is Business Process Management?

**Definition**

## Business Process Management (BPM)

Business Process Management (BPM) is a **body of principles, methods and tools to design, analyze, execute and monitor business processes**.

- Business processes are the focal point of BPM

Reference

 (Dumas et al. 2018)

Erasmus+ AIBA

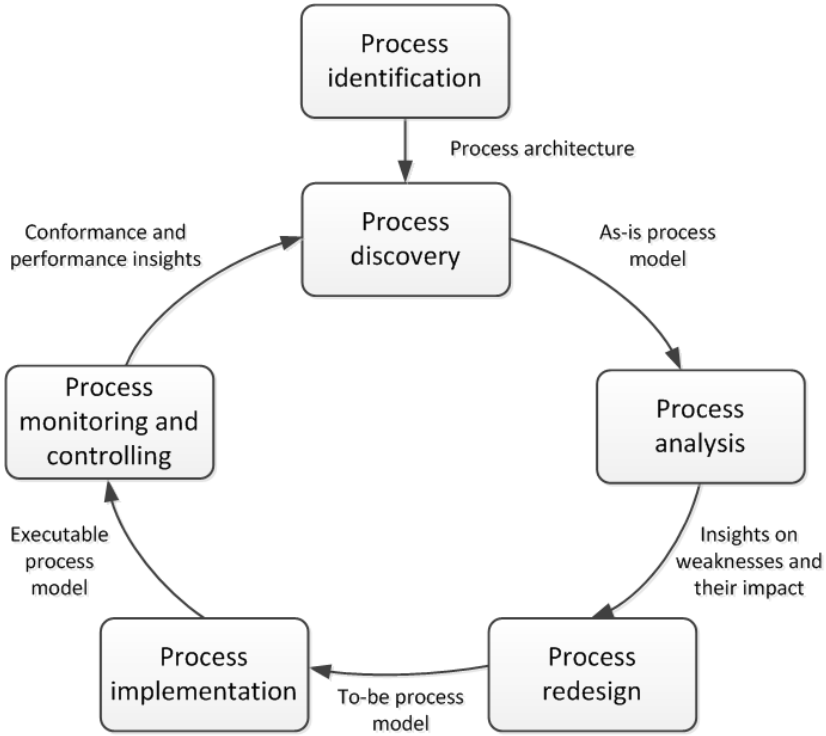
# Goals of Business Process Management

- Get holistic view on how an organisation works
- Understand activities of an organisation and their relations
- Understand embedding of activities within an organisational and technical context

**Potential for improving the business process**

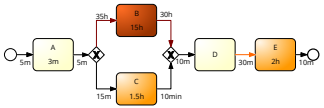
# A structured BPM approach: The BPM Lifecycle

- The BPM lifecycle is a widely accepted model to **structure BPM initiatives**
- **High level abstraction** of what need to be done
- Consists of **six consecutive phases**
- Each phase has an **output,** which is used in the next phase
- **Iterative** nature of the lifecycle makes it an **ongoing endeavour**

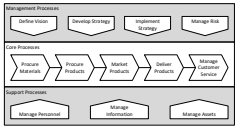



(Dumas et al. 2018)

# BPM Lifecycle




Identify processes relevant to the problem at the table, delimiting the scope of these processes and identifying relations between these processes.




Process identification

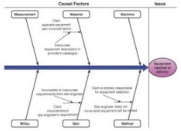
Process architecture

Understand the business processes in detail and model them in form of process models.

Process discovery

As-is process model

Identify, analyze and assess the issues and opportunities for process improvement for the discovered business processes.



Process analysis

Insights on weaknesses and their impact

Address and propose potential remedies for the identified issues.

Process redesign

To-be process model

Process implementation

Executable process model

Once processes are redesigned, the necessary changes should be implemented so that the redesigned process can eventually be put into action.

Process monitoring and controlling

Conformance and performance insights

All processes are continuously monitored and controlled in order for all new issues to be resolved.

(Dumas et al. 2018)

# The six core elements of BPM

| Strategic Alignment | Governance | Methods | Information Technology | People | Culture |
|---|---|---|---|---|---|
| Process Improvement Planning | Process Management Decision Making | Process Design & Modeling | Process Design & Modelling | Process Skills & Expertise | Responsiveness to Process Change |
| Strategy & Process Capability Linkage | Process Roles and Responsibilities | Process Implementation & Execution | Process Implementation & Execution | Process Management Knowledge | Process Values & Beliefs |
| Enterprise Process Architecture | Process Metrics & Performance Linkage | Process Monitoring & Control | Process Monitoring & Control | Process Education | Process Attitudes & Behaviors |
| Process Measures | Process Related Standards | Process Improvement & Innovation | Process Improvement & Innovation | Process Collaboration | Leadership Attention to Process |
| Process Customers & Stakeholders | Process Management Compliance | Process Program & Project Management | Process Program & Project Management | Process Management Leaders | Process Management Social Networks |

Factors

Capability Areas

 (Rosemann et al. 2015)

# The six core elements of BPM: Strategic alignment

- **Strategic Alignment**
- Process Improvement Planning
- Strategy & Process Capability Linkage
- Enterprise Process Architecture
- Process Measures
- Process Customers & Stakeholders

## Definition

Strategic alignment is defined as the **tight linkage of organizational priorities and enterprise processes** enabling continual and effective action to improve business performance. Five distinct capability areas have been identified as part of an assessment of strategic alignment in BPM.

 (Rosemann et al. 2015)

# The six core elements of BPM: Governance

- **Governance**
- Process Management Decision Making
- Process Roles and Responsibilities
- Process Metrics & Performance Linkage
- Process Related Standards
- Process Management Compliance

## Definition

BPM governance is dedicated to **appropriate and transparent accountability in terms of roles and responsibilities** for different levels of BPM (portfolio, program, project, and operations). Furthermore, it is tasked with the design of decision-making and reward processes to guide process-related actions.

 (Rosemann et al. 2015)

# The six core elements of BPM: Methods

- **Methods**
- Process Design & Modeling
- Process Implementation & Execution
- Process Monitoring & Control
- Process Improvement & Innovation
- Process Program & Project Management

## Definition

Methods, in the context of BPM, have been defined as the **tools and techniques that support and enable consistent activities on all levels of BPM** (portfolio, program, project, and operations). Distinct methods can be applied to major, discrete stages of the process lifecycle.

 (Rosemann et al. 2015)

# The six core elements of BPM: Information Technology

- **Information Technology**
- Process Design & Modelling
- Process Implementation & Execution
- Process Monitoring & Control
- Process Improvement & Innovation
- Process Program & Project Management

## Definition

Information technology (IT) refers to the **software, hardware, and information systems that enable and support process activities**. As indicated, the assessment of IT as one of the BPM core elements is structured in a similar way to that of BPM methods, and also refers to the process lifecycle stages.

 (Rosemann et al. 2015)

# The six core elements of BPM: People

- **People**
- Process Skills & Expertise
- Process Management Knowledge
- Process Education
- Process Collaboration
- Process Management Leaders

## Definition

While the information technology factor covered IT-related resources, the factor "people" comprises human resources. This factor is defined as the **individuals and groups who continually enhance and apply their process and process management skills and knowledge to improve business performance**.

 (Rosemann et al. 2015)

# The six core elements of BPM: Culture

- **Culture**
- Responsiveness to Process Change
- Process Values & Beliefs
- Process Attitudes & Behaviors
- Leadership Attention to Process
- Process Management Social Networks

## Definition

Culture, the sixth and final BPM core element, refers to the **collective values and beliefs that shape process-related attitudes and behavior** to improve business performance.

 (Rosemann et al. 2015)

# Questions to be answered

- ✓ What is a Business Process?
- ✓ What is Business Process Management (BPM)?
- ? How can Business Processes be communicated?

# Communicating Business Processes

- Business Processes can be communicated in various ways, e.g.

Textually

Orally

Modeling Language

- Can you think of other forms of communicating processes?
  → E.g. non-verbally by imitation
- Can you think of real-life examples, where processes are communicated in one of these ways?
  → E.g. orally: Introduction into work processes during onboarding
- Can you think of advantages and disadvantages for these communication choices?
  → E.g. textually: might get complex for large processes, but no knowledge required

# Essence of Modelling

- Models are abstractions from real world phenomena, developed for the purpose of reducing overall complexity.

- A model is the result of analysis and synthesis
  - A mapping of an original
  - A reduction of the original
  - Serving a specific purpose

- Original
  - May be existing, fictitious, or planned
  - May be a model as well



Dumas et al. 2018

Erasmus+ AIBA

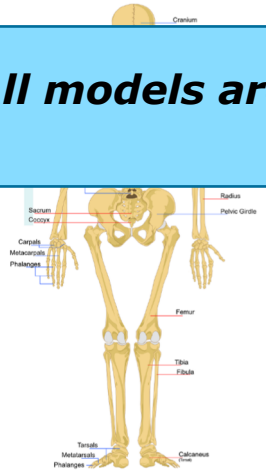
# Object Models

Inspired by Matthias Weidlich

Original

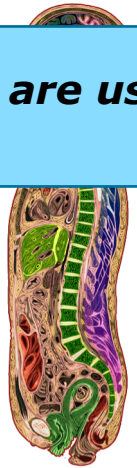
Model of Abstraction

Model of Abstraction




Model

> ***"All models are wrong; some models are useful."***
> **[George E. P. Box]**



# Essence of Process Modelling

Process model

- Original is a business process
- Process model is abstraction for a certain purpose
- Again, original existing, fictitious, or planned

Process models answer questions

- What is done?
- Who is responsible?
- What are the decisions taken?
- How long does it take to finish the process?
- Who is affected by a change in the process?

# Process Models

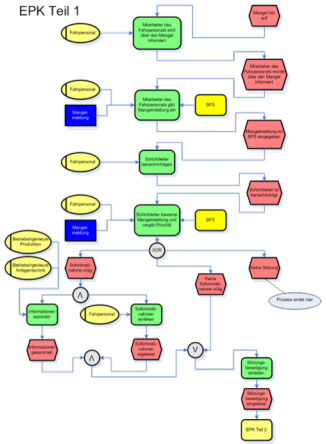
Inspired by Matthias Weidlich

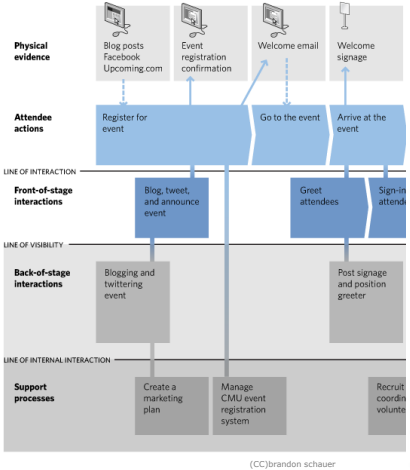
Original

Model

Model of Abstraction

Model of Abstraction



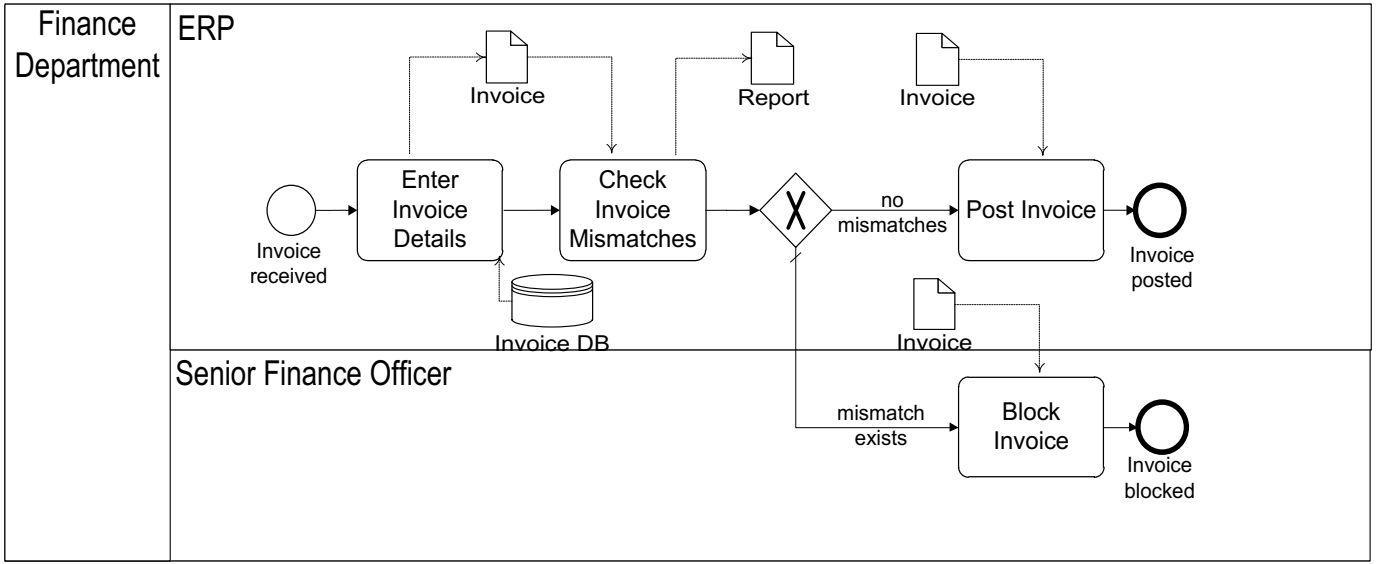

(CC)brandon schauer

# The Core Elements of a Process

- Activities
  - Active elements that describe elementary pieces of work (e.g. *"enter customer order"*)
  - Time-consuming, resource-demanding
- Events
  - Passive elements (e.g. *"customer order has been entered"*)
  - Represent conditions / circumstances
  - How time, messages, exceptions influence the execution of the process
- Data
  - The organizational artefacts that undergo state changes
  - Physical or electronic information (e.g. customer data, order data)
- Resources
  - Persons, organisational units, systems that execute activities (e.g. warehouse clerk, ERP system)

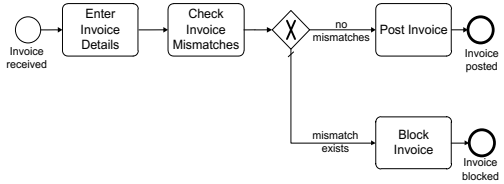
# How do we Combine and Represent these in a Process Model?

1. What needs be done and when? – *Activities*, *Events* and *Control flow*
2. What do we need to work on? – *Data*
3. Who's doing the work? - *Resources (human & systems)*

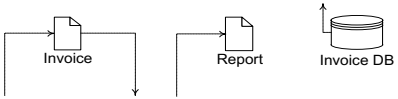


# Process Perspectives

- Control Flow Perspective
  - "what needs to be done and when"
  - predecessor/successor relationship among activities and events
  - the central information depicted in a process model

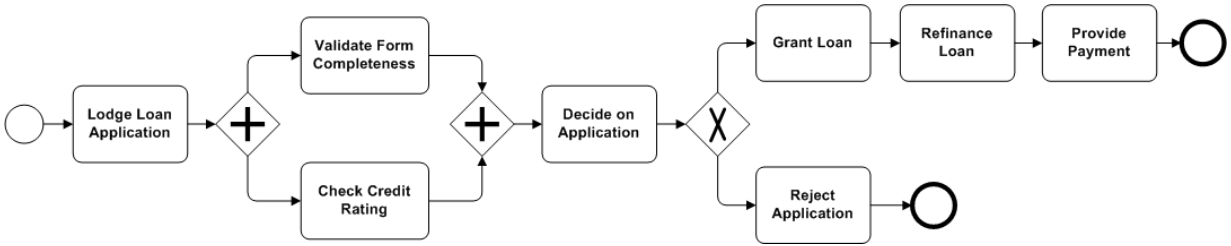



- Data Perspective
  - "what do we need to work on"
  - input/output data to activities
  - complements the control flow




- Resource Perspective
  - "who's doing the work"
  - human participants and systems that perform control flow activities and generate events
  - complements the control flow

# Systematic Description using Process Modeling Languages




**Activity nodes** describe units of work
**Control flow nodes** capture the flow of execution
**Event nodes** tell us that something may or must happen that requires a reaction

# Answered Questions

## What is a Business Process?

→ A collection of related **events, activities and decisions**, that involve a number of **actors and resources**, and that collectively lead to an outcome that is of **value** to an organization or its **customers**

## What is Business Process Management (BPM)?

→ The *body of* ***principles, methods and tools to design, analyze, execute and monitor business processes***.

## How can Business Processes be communicated?

→ *By different means, while* ***models*** *have several advantages once the language is learned*

# References


- Rosemann, M., and vom Brocke, J. (2015). "The Six Core Elements of Business Process Management," in *Handbook on Business Process Management 1*, Berlin, Heidelberg: Springer Berlin Heidelberg, pp. 105–122. (https://doi.org/10.1007/978-3-642-45100-3_5).
- Porter, Michael E. (1985) "Creating and sustaining superior performance." *Competitive advantage* 167-206.
- Dumas, M., La Rosa, M., Mendling, J. and Reijers, H.A. (2018), *Fundamentals of Business Process Management*, *Fundamentals of Business Process Management*, Second Edi., Springer-Verlag Berlin Heidelberg, available at:https://doi.org/10.1007/978-3-642-33143-5.
- Shaw, W. (2007), RFID, IEEE ENGINEERING MANAGEMENT REVIEW, VOL. 35, NO. 2, SECOND QUARTER 2007