Fundamentals
of Business Process Management

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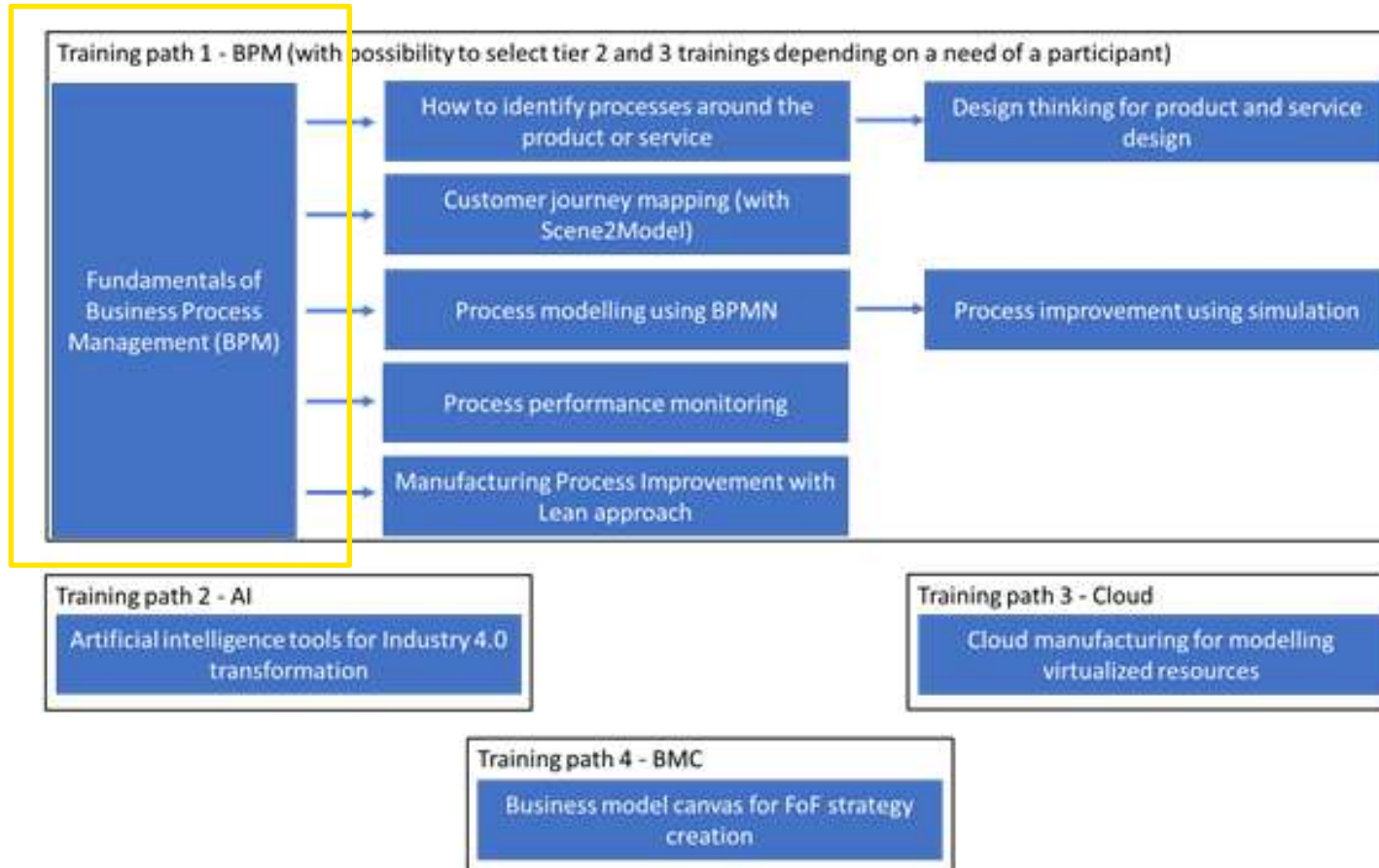**DIGITAL DESIGN SKILLS FOR FACTORIES OF THE FUTURE**

Content and aim of the course

- ❑ What does a process-oriented approach mean?
- ❑ What a process management is?
- ❑ How the BPM Life cycle works?
- ❑ What to do/what not to do to succeed?

The course context – a traning path/options

Training path 1 - BPM (with possibility to select tier 2 and 3 trainings depending on a need of a participant)

Fundamentals of Business Process Management (BPM)

- How to identify processes around the product or service → Design thinking for product and service design
- Customer journey mapping (with Scene2Model)
- Process modelling using BPMN → Process improvement using simulation
- Process performance monitoring
- Manufacturing Process Improvement with Lean approach

Training path 2 - AI

Artificial intelligence tools for Industry 4.0 transformation

Training path 3 - Cloud

Cloud manufacturing for modelling virtualized resources

Training path 4 - BMC

Business model canvas for FoF strategy creation

What is the big deal about process management?

Manufactoring and …. manufactoring

Source: Reuters, BBC News

Source: https://www.roboticsbusinessreview.com/

Good process does not necessarily develop quality car, but…

What is a difference?

- We need **predictable** and **high quality** processes, delivering for **customers required** goods and services.

- So, we would rather buy and drive a car from a well-known company than a small street garage.

- But, as always… there are exceptions

    Service calls: Audi - 7, BMW – 9, Citroen – 16, Mercedes – 27

(Source: Auto Bild, www.auto-swiat.pl, 2019)

When
to start…?

Triggers of changes

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**DIGITAL DESIGN SKILLS FOR
FACTORIES OF THE FUTURE**

Triggers of change (1)
From functions to processes

❑ Dissatisfied customers

❑ Too long procedures

❑ The need to improve work

❑ No process measures and defined requirements

❑ Too many signatures under "one case"

❑ "Investing", adding people does not eliminate the problem

❑ Shifting responsibility between people

❑ It is not known who is responsible for achieving the goal

❑ Fire-fighting instead of prevention

❑ Frustration of employees

❑ Decision-making uncertainty

Triggers of changes (2)
BPM implementation

- Products/services don't meet customer expectations
- Lack of reliable or conflicting management information

   Competitors are getting ahead on price/product/service

   Long lead times to meet requests

   Downward price pressure

- Initiatives are poorly linked (strategic/operational level)
- Lack of communications…

More details: Jurczuk A., *Identification and Tracking of Process Inconsistencies in Manufacturing Enterprises*, w: *8th International Conference on Engineering, Project, and Product Management (EPPM 2017). Lecture Notes in Mechanical Engineering*, S. Sahin (red.), Springer, Cham, 2018, s. 129-138

How
to attain it…?

What does Business Process Orientation mean?

Silo structure versus process oriented

Functional View		Process View
Which products or services are delivered	→	Emphasis on improving "how work is done"
Frequent "hand-offs" among functions which remain largely uncoordinated	→	Cross-functional coordination, teamwork stressed
Pieces of the process are managed	→	"Systems view," i.e., entire process is managed
Internal/company orientation	→	Customer orientation

(McCormack and Johnson, 2001)

Functional	▶ mass production ▶ long product life cycle ▶ low variability (market/requirements)
Process oriented	▶ mass product customization ▶ high variability (market/requirements)
Hybrid	▶ process oriented Front office ▶ functional Back Office

# Predictable, high quality processes
Satisfied customers
What
decides?

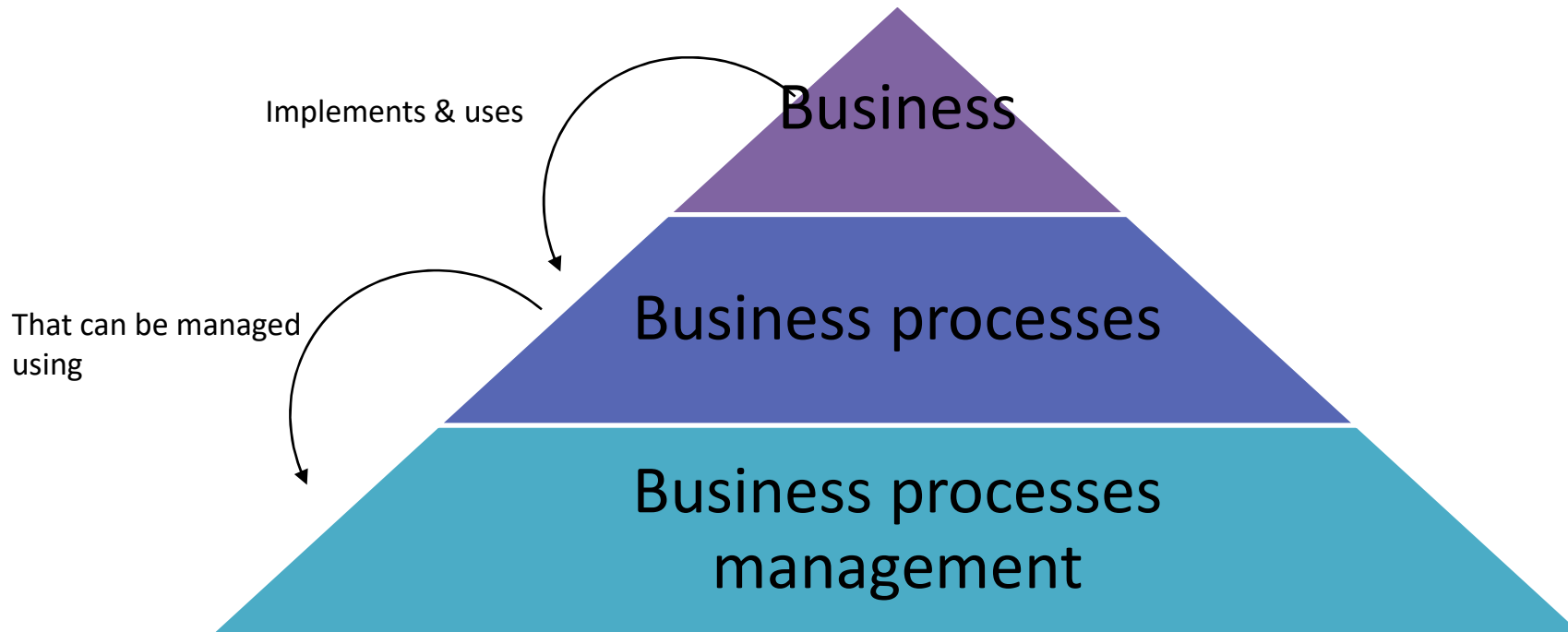The fundamentals of a process oriented approach?

Business Process Orientation (BPO)

Business process orientation of an organisation is the level at which an organisation pays attention to its relevant (core) processes.

(McCormack and Johnson, 2001)

Culture

BPO

Structure

Architecture

Monitoring

BPM
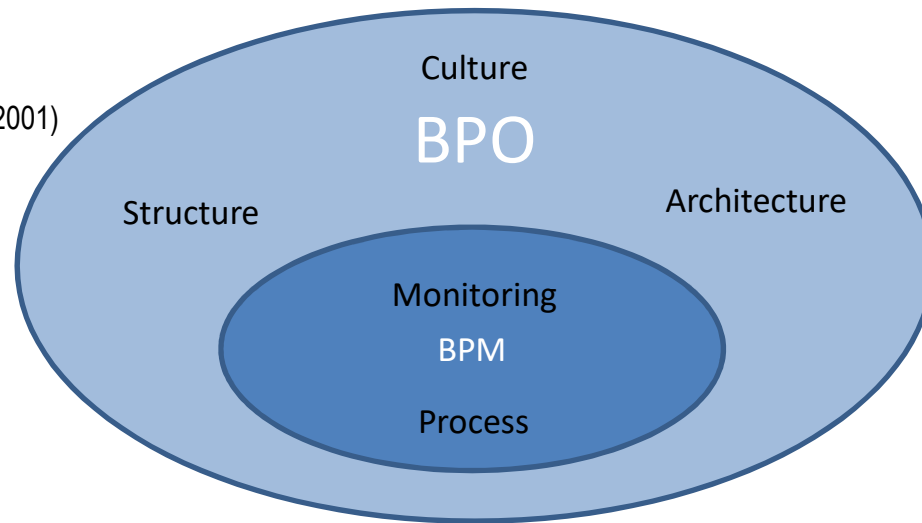
Process

Key-succes factors: Culture,

Business process management (BPM)

Implements & uses

That can be managed using

Business

Business processes

Business processes management

„**BPM** is the achievement of an organization's objectives through the improvement, **management** and control of essential business **processes**"

(Jeston & Nelis, 2006)

Business process management (2)

Management approach focused on aligning all aspects of an organization with the needs of clients (**internal & external** customers)

Business Process Management (3)

- **Disciplined approach** to identify, design, execute, document,measure, monitor and control both automated and nonautomated business processes **to achieve consistent, targeted results** aligned with an organisation's **strategic goals.**

- Involves the deliberate, collaborative and increasingly **technology** aided: definition, improvement, innovation and management of **end-to-end business processes** that drive business results, **create value** and enable an organisation to **meet its business objectives with more agility**.

- Enables an enterprise to **align** its business **processes** to its business **strategy**, leading to effective overall company **performance** through **improvements** of specific work activities either within a specific department, across the enterprise or between organisations.

(Association of Business Process Management Professionals-ABPMP)

BPM – a holistic approach

Governance

Methods

Strategic alignment

BPM

Information Technology

Culture

People
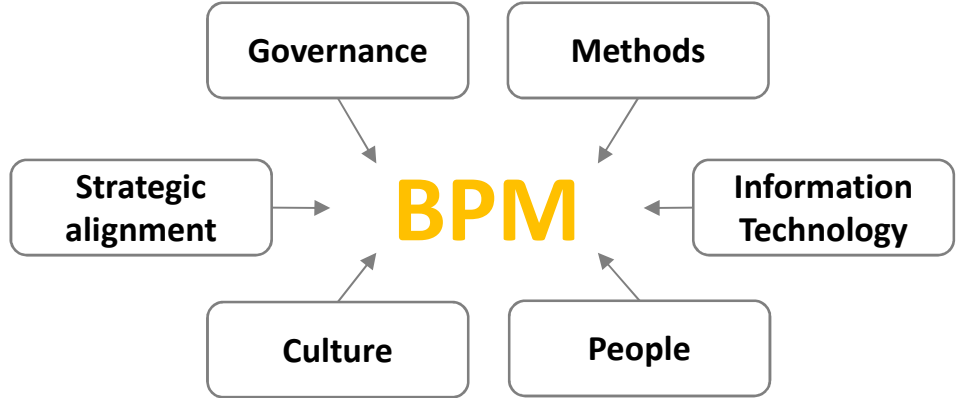
❏ Promoting process-based **culture**

❏ New roles and responsibilities

❏ **Customer expectations**

❏ Managing **end-to-end** business processes

❏ **Continuously** improvement products and services delivered to customers

❏ **Integrating** diverse initiatives into a process diverse process-oriented approach

❏ Improving a **flexibility**, ability to **change**

❏ Managing **knowledge** about processes

Source: Rosemann & de Bruin, BPTrends, 2005

Process oriented management
Holistic and integrated approach
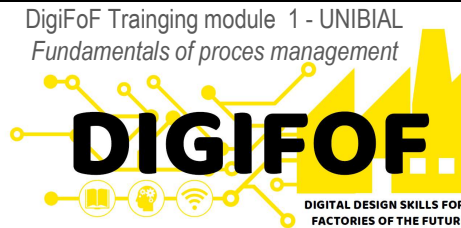
- Promoting process-based **culture**

- New **roles** and **responsibilities**: process owners, designers and architects...

- Understanding and meeting **customer expectations**

- Managing **end-to-end** business processes crosses organisational boundaries

- **Continuously** improvement products and services delivered to customers (internal and external)

- **Integration** of diverse improvement initiatives/projects

- Managing **knowledge** about processes

- **Integration** with **IT**

Critical Success Factors (CSFs) BPM projects

- Strategic alignment

- Top management support

- Methodology

- Team domain competences

- Project management

- Culture

- Communication

- Empowerment

- Measurement and monitoring

- Information technology

More details: Jurczuk A. (2016). *Towards process maturity - triggers of change, Proceedings of BPM Conference,* VGTU.

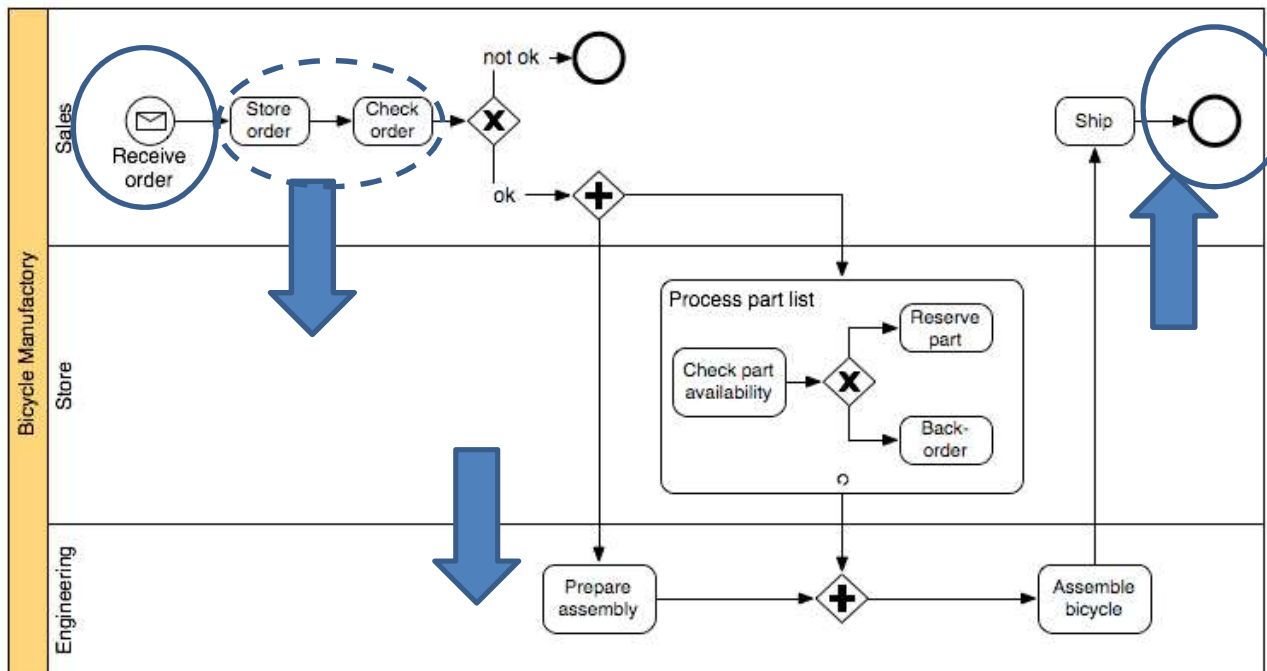# Business process

Definitions, types

Business Process
End–to-End perspective

- A business process is a **set of activities** that accomplishes or produces something of value to the organization and/or for the customer.

- A group of activities is related to a **particular skill or goal** (i.e. sales, finance, manufacturing)

- A business process involves **people** (roles) and other **resources** (capital, systems) in the execution of tasks.

- A process has **inputs** and **outputs** that are **measurable**, and therefore can be managed.

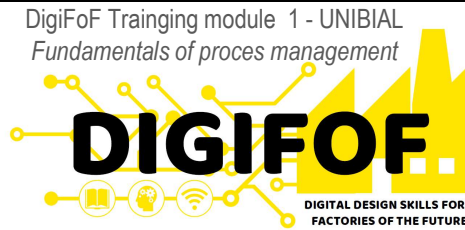- Business processes **integrate IT** and **people**.

End-to-End perspective

Source: www.bpmi.org
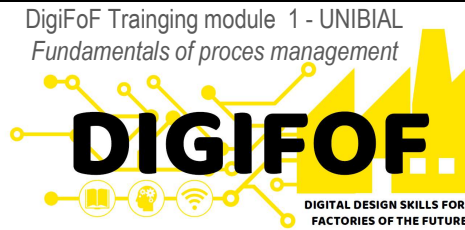
Business Process
Participants

1. Customers (internal & external)
2. Employees
3. Investors, shareholders
4. Suppliers
5. Society
6. Unions

Business Process
Inputs, triggers

- Form

- Document

- E-mail

- Call

- Message (from a system)

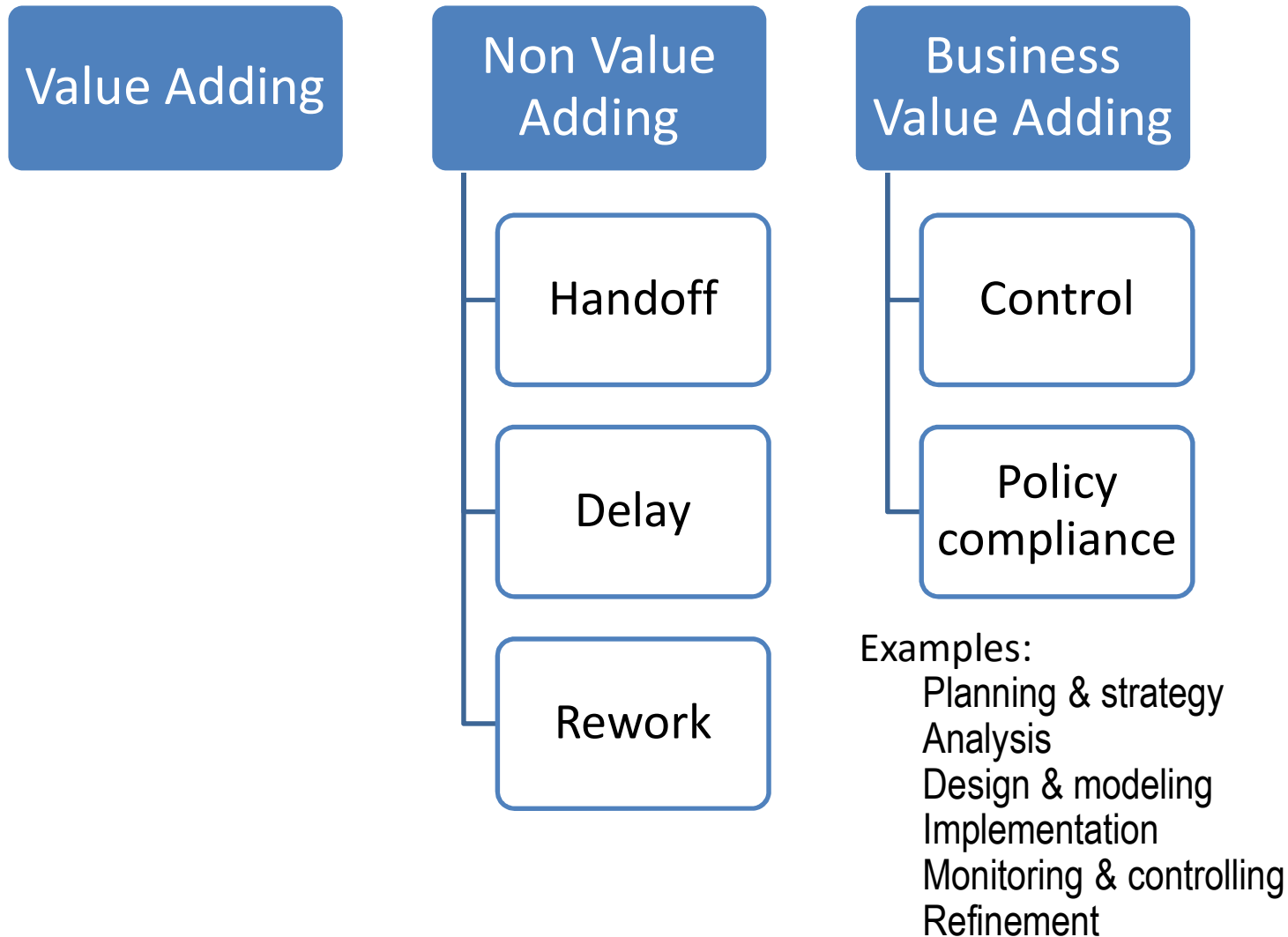- Approval from a employee/customer

- Generally - an event….

Business Process
Outputs

- Process participants perspective: management dashboard,

  reports, e-mail, alerts.

- Outcomes for participants:

  – if the process results meet customers requirements?
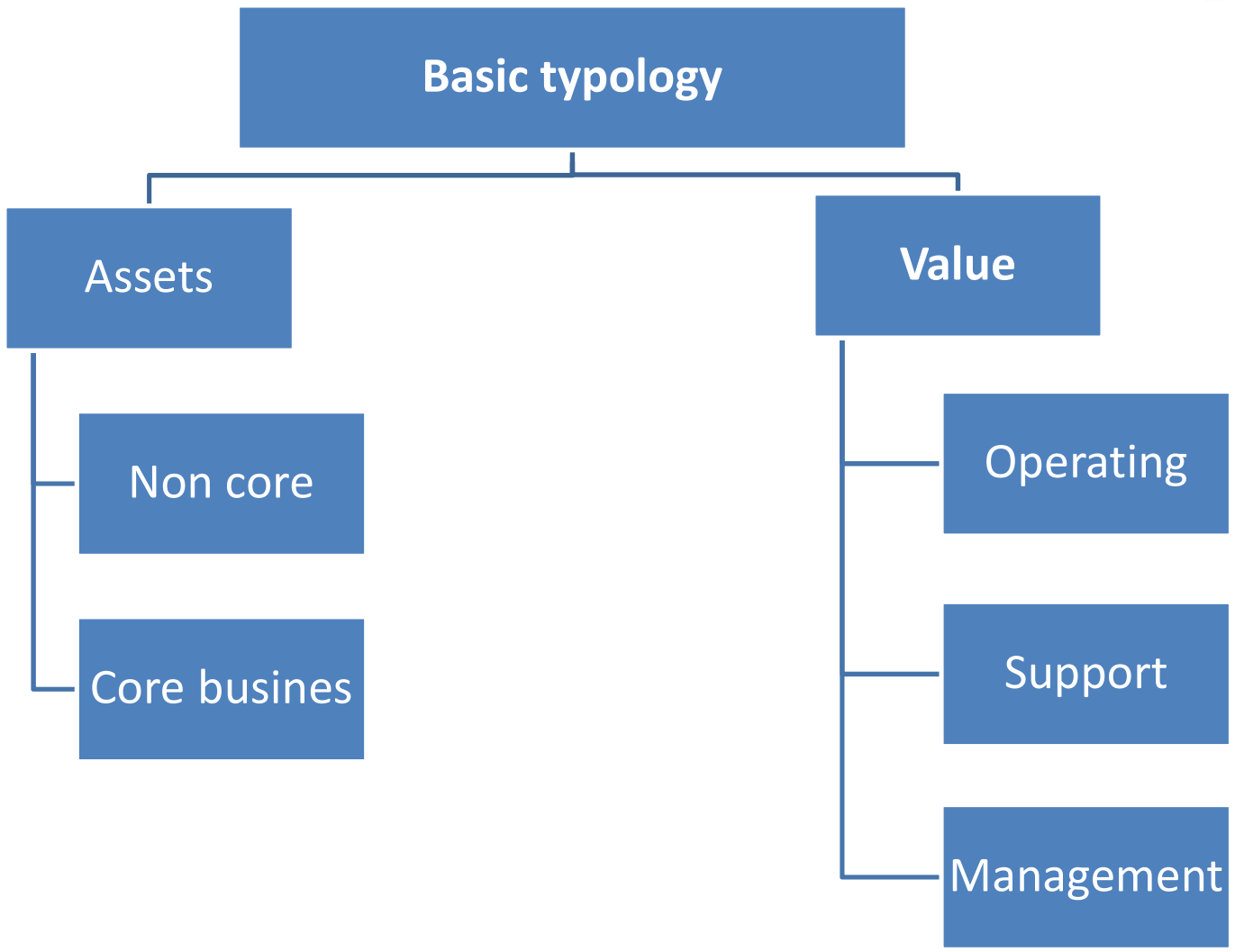
  – organisation fits to changes

Process Activities

Would your customer be willing to pay for this activity?

Value Adding	Non Value Adding	Business Value Adding
	Handoff	Control
	Delay	Policy compliance
	Rework	

Examples:
    Planning & strategy
    Analysis
    Design & modeling
    Implementation
    Monitoring & controlling
    Refinement

Basic typology of processes
How to inventory processes

```
                        ┌─────────────────────┐
                        │   Basic typology    │
                        └─────────────────────┘
                    ┌───────────┴───────────┐
              ┌──────────┐            ┌──────────┐
              │  Assets  │            │  Value   │
              └──────────┘            └──────────┘
                   │                       │
            ┌──────────┐            ┌──────────┐
            │ Non core │            │Operating │
            └──────────┘            └──────────┘
            ┌──────────┐            ┌──────────┐
            │Core busines│          │ Support  │
            └──────────┘            └──────────┘
                                    ┌──────────┐
                                    │Management│
                                    └──────────┘
```

Types of Processes (1)
How to inventory processes

Primary (operating) processes – represent the core, or main, business activities of the organization. Create or deliver value for which customers are willing to pay.

- Sales
- Production
- Policy/contract servicing
- Claims management
- Distribution management

Types of Processes (2)
How to inventory processes

Strategic processes – this level represents the strategic processes, which must ensure that the underlying processes are meeting, and continue to meet, the specified objectives.

– Business strategy

– Marketing strategy

– Product development

– Strategic relationship

Types of Processes (3)
How to inventory processes

- **Support & management processes** – represent the non-core processes, which support the core processes of the organization.
  - HR
  - Finance
  - Facilities or capacity management
  - IT management
  - Corporate service

Business Process Management life-cycle

Stages

BPM life-cycle
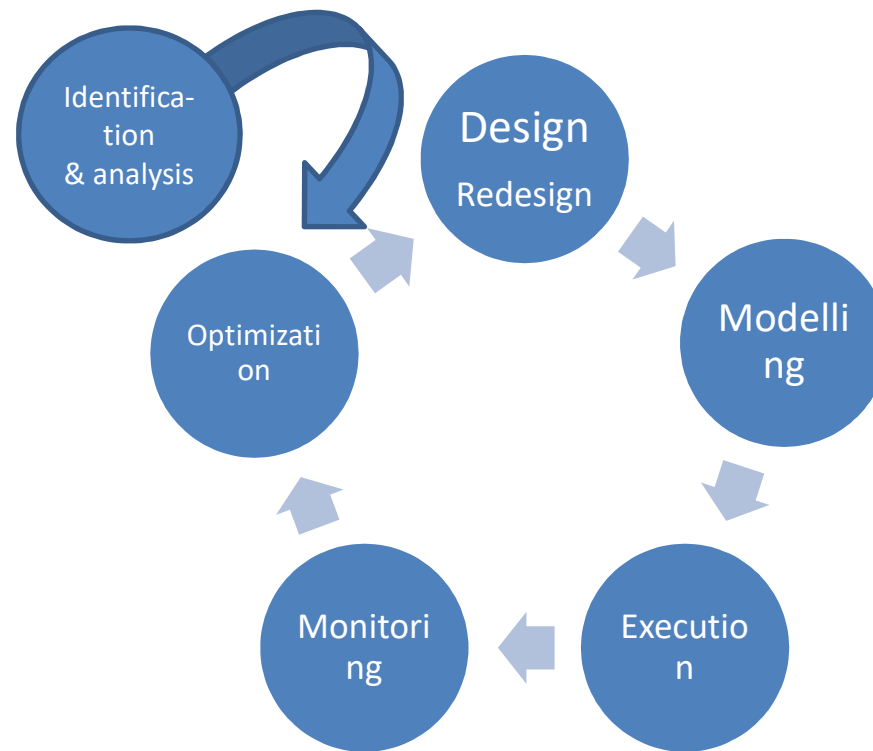
BPM LC – Identification & „as is" analysis
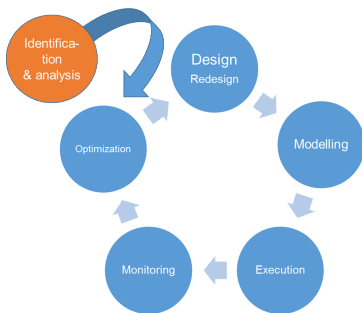
- Identification of a process inconsistency (What?)

- Identification of processes relevant to the problem (Where?)

- Prioritized problems in terms of their impact, of the estimated effort required to resolve them (What/Why?)

- Describing the current state of each of the relevant processes (How?)

Example
Process incosistency in Polish companies

- Too long time to launch a new product/service
- Customers need to implement unique processes, need of standardize common processes throughout the organization
- Too high or no monitored costs of technology solutions
- High staff turnover
- Low quality of back office's support
- A necessity of work improvement
- IT solutions are incompatible with business requirements

Source: based on own research, 2016.

BPM LC - Design
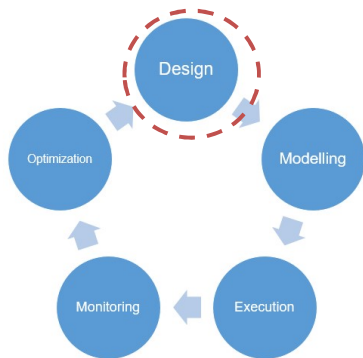
- Process Design encompasses both the identification of existing processes ("as-is") and the design of "to-be" processes.

- The aim is to ensure that a correct and efficient theoretical design is prepared.

- The proposed improvement could be in human-to-human, human-to-system, and system-to-system workflows, and might target regulatory, market, or competitive challenges faced by the businesses.

BPM LC - Modelling
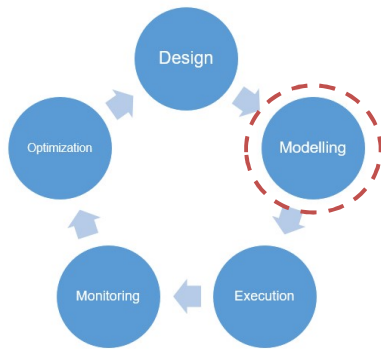
- Modeling takes the theoretical design and introduces combinations of variables.

- It also involves running "what-if analysis" on the processes: *"What if I have 75% of resources to do the same task?" "What if I want to do the same job for 80% of the current cost?"*.

BPM LC - Execution
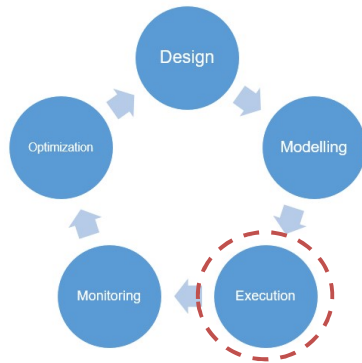
- ## Organizational change

- ## Process automation:

  - ➢ to develop an application that executes the required steps of the process,

  - ➢ to use a combination of software and human intervention - more complex => difficult documentation process.
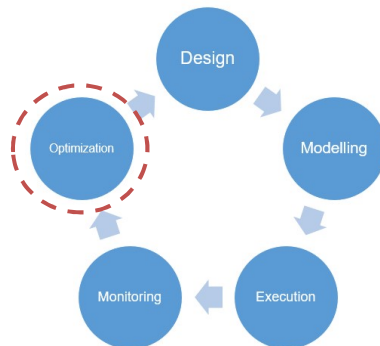
BPM LC - Monitoring
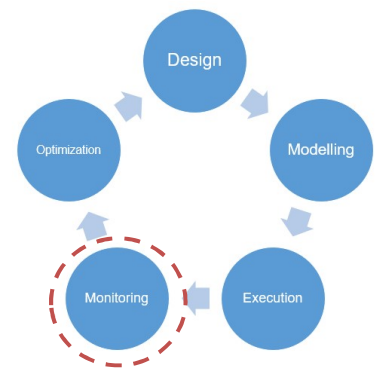
- **Tracking** of individual processes and process system (monitoring)

- The degree of **monitoring** depends on needed information (see: monitoring in real-time, near real-time or ad-hoc).

- **Process mining** - collection of methods and tools related to process monitoring.

BPM LC - Optimization

- Retrieving process performance information from modeling or monitoring phase;

- Identifying the potential or actual **bottlenecks** and the potential **opportunities** for cost savings or other improvements;

- And then, applying those enhancements in the design of the process.

Principles of good BPM (1)

No.	Principle	Description
1.	Principle of Context Awareness	Should fit to the organizational context (environment, market, customers, BPM maturity) It should not follow a cookbook approach
2.	Principle of Continuity	Should be a permanent practice It should not be a one-off project
3.	Principle of Enablement	Should develop capabilities It should not be limited to firefighting
4.	Principle of Holism	Should be inclusive in scope (see suboptimisation effect) It should not have an isolated focus
5.	Principle of Institutionalization	Should be embedded in the organizational structure It should not be an ad-hoc responsibility

Principles of good BPM (2)

6.	Principle of Involvement	Should integrate all stakeholder (process participants) groups It should not neglect employee participation
7.	Principle of Joint Understanding	Should create shared meaning (new process competency, understood on each level) It should not be the language of experts
8.	Principle of Purpose	Should contribute to strategic value creation It should not be done for the sake of doing it
9.	Principle of Simplicity	Should be economical, justified It should not be over-engineered
10.	Principle of Technology Appropriation	Should make opportune use of technology It should not consider technology management as an after-thought (a tool not a target)

Source: vom Brocke, et al. (2014). *Ten Principles of Good Business Process Management*. Business Process Management Journal, 20(4), pp. 530-548

Benefits and challenges of BPM

Business reality

BPM - *benefits and… reality*

- Reduces manual work, increases automation

- Reduces process cycle time

- Improves a flexibility of the organization, ability to change

- Better decisions by better process's review

- Improves interactions with customers

- Improves employees satisfaction

- …

Success ratio of
BPM projects
from 50 to 20%

Iqbal et al., 2015

Why do BPM project fail?

❑Lack of process approach understanding

- simply automating a process without attempting to understand how it works

- lack of internal/external customer-centric business process definition

- lack of communication, leadership, executive support, people resist, …

❑Lack of a wider knowledge

- not assessing alternative solutions

- not understanding the problem you are trying to solve

- not-adequate project management, tools, methodology, …

Challenges of BPM in digital era

❑ Meeting requirements of **Industry 4.0** (smart production systems, Robotic Process Automation, …)

❑ Meeting requirements of **smart home, smart city** (information for/from sensors, …)

❑ Integration with of **social media** (new trends, innovative ideas, crowdsourcing, …)

❑ **Digital technologies and competencies** for the „old ceremony" (Internet of Things, Business Intelligence, big data, cloud BPM, process mining, cyber-physical systems, cognitive computing …)

Questions/discussion

- What are the main factors of successful implementation of BPM?

- What does the end–to-end perspective mean in process analysis?

- What are the main stages of BPM life-cycle?

- Identify CSF's of your company

Information

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