

# Business analysis & BPM methodologies

PV207 – Business Process Management

Spring 2022

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# Lecture overview

- Why a methodology for BPM development?
- Methodology overview
- BPM and SOA again
- BPM development approaches
  - Top down
  - Bottom up
  - Meet in the middle
- Library scenario:
  - Strategy and vision
  - Goals, objectives and KPIs
  - Stakeholders identification
  - Business components
  - Processes and services
  - Process description
  - Process BPMN diagram

# Last lecture recap

- **Processes**
  - **What is business process?**

# Business process definition

## Definition:

*Series of logically related activities or tasks (such as planning, production, sales) performed together to produce a defined set of results.*

-- Business Dictionary:

*A repeatable sequence of **logically related** activities, which contributes to fulfilment of **one or more** business objectives*

-- Jiří Kolář

# Last lecture recap

- Processes
  - What is business process?
  - **What is BPM?**

# Business Process Management

Is a **Management discipline**, focused on systematic **definition** and **execution measurement of processes** in organizations

- **An effort to describe processes** in organisation measure results and **manage process changes** towards higher efficiency

# Last lecture recap

- Processes
  - What is business process?
  - What is BPM?
  - **What is BPM adoption?**

# BPM adoption - definition

*A **change** in target organization **towards the establishment of a **process-driven management model**.***

*This can, but does not necessarily have to, lead to the **automation** of some processes in a **process-oriented Information Systems**.*

*Such systems can be eventually based on a **Business Process Management Suite***



# Why we need specific methodologies for BPM-oriented development?

- **BPM differ significantly from traditional data-based approach to system design**
  - Special analysis & design steps needed
  - Traditional methodologies do not fit
- **BPM oriented SW solutions depend on proper organisation structure**
- **BPM discipline has impact both on business structure and EIS**
- **Organisation changes are often necessary**
- **Processes have to be aligned with business**

# Some BPM methodologies

- **General BPM methodology (Mathias Weske)**
  - Rather general, End-to-end, very complete
- **CBM-BPM-SOMA**
  - IBM specific, proprietary, tight with IBM technologies
- **IBPM**
  - Focused on general organization of a BPM project
  - Emphasis on SOA-based implementation
- **BPM4SME**
  - End-to-end
  - Focused on small scale BPM adoptions

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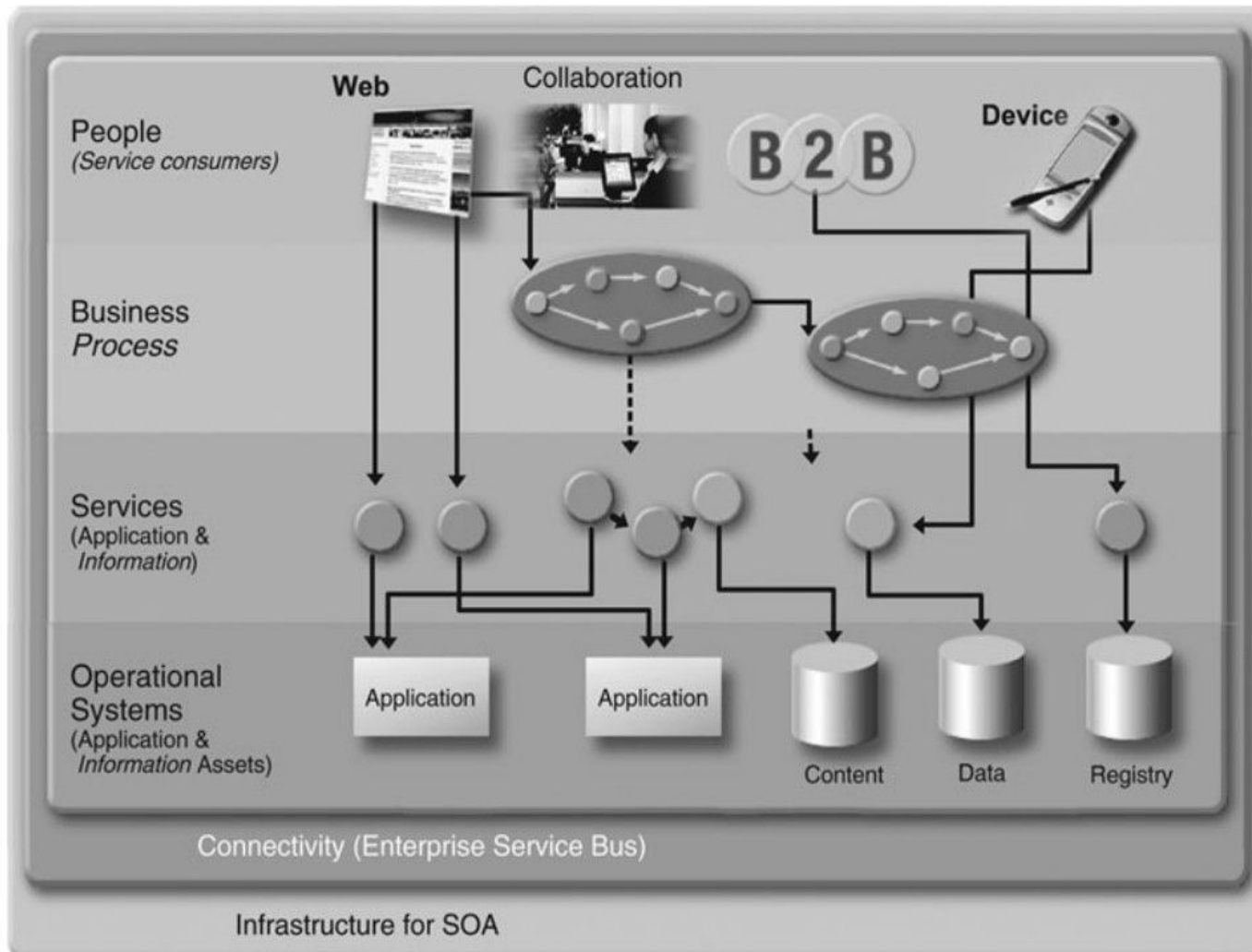
# 3 meanings of the word "service"

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  - Google provides a search for addresses of restaurants in neighbourhood
  - Defined by a User Interface / Programming interface
- Web Service
  - Google provides Web Service API for retrieving GPS coordinates of particular address
  - Defined by a WSDL/REST methods definition
  - Request - response model

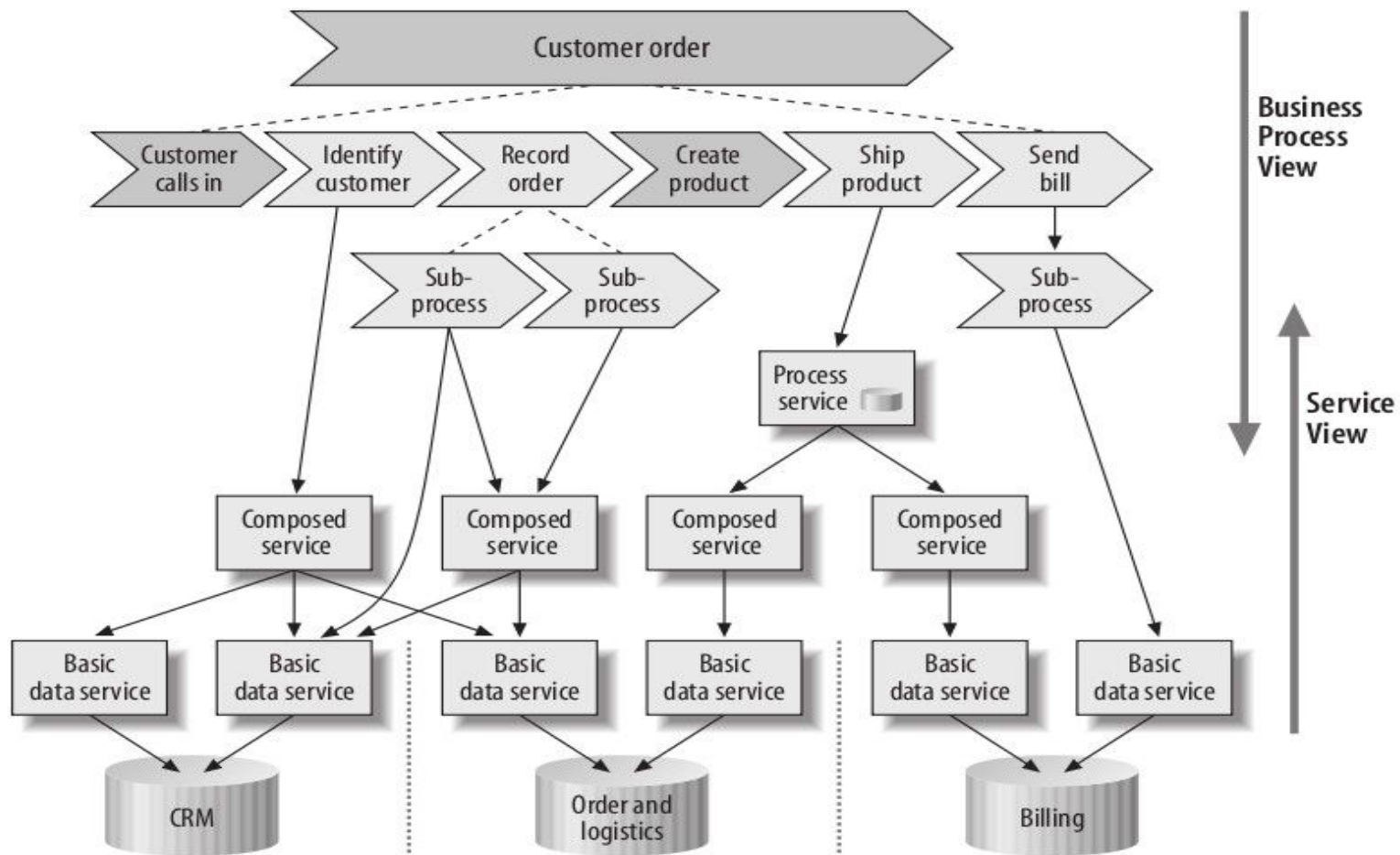
# Relationship of IT services and BPM

- **Process can be decomposed to activities**
- **Many automated activities are implemented as services** (service orchestration)
- We want to **assemble our processes** from many independent services
- IT services are ke building stones of an automated BPM solution
- IT services provide flexibility we need to achieve process evolution and improvement

# Relationship of IT services and BPM (cont.)



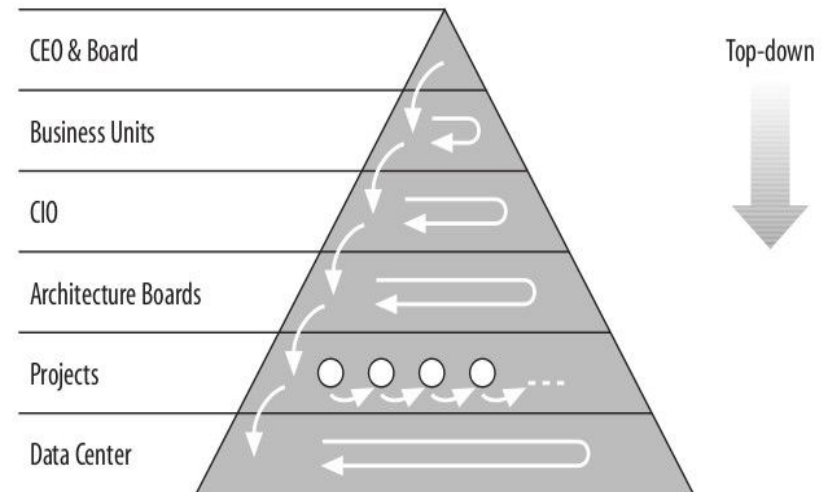
# Relationship of IT services and BPM (cont.)





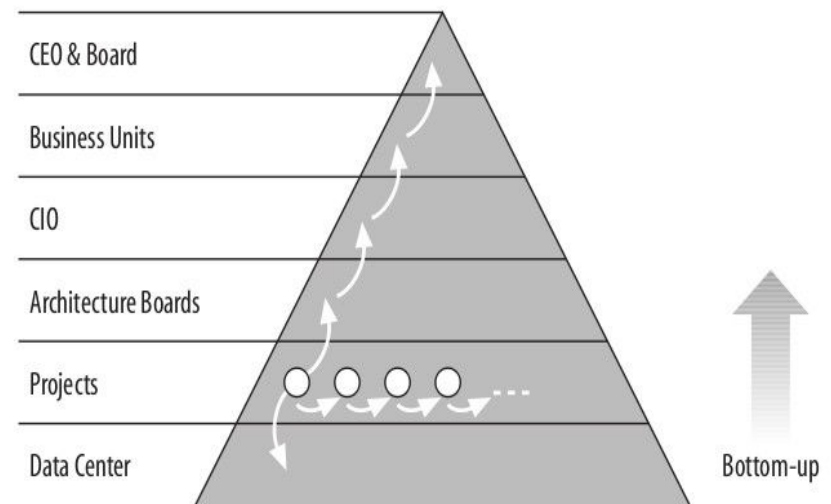
# Top down BPM development approach

- Sumarize business **strategy: vision&mission**
- Identify/Define **business goals and objectives**
- Define/Identify **processes and roles**
- Implement **executable processes**
- Reuse/Implement required **services** and **SW components**



# Bottom up BPM development approach

- Identify **services** on lowest level (code)
- Identify **composed services**
- **Discover processes** (by hand, algorithmic)
- **Refine processes**
- **Align with goals and strategy**

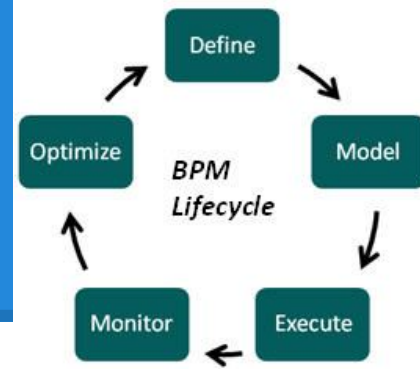


# Reality: Meet in the middle

## In parallel:

- Top down
  - Define/refine strategy and vision
  - Identify/refine goals and components
  - Define KPI/KRI
  - Identify/define processes
- Bottom up
  - Identify existing services and SW components
  - Identify composed services
  - Assign to processes

# Recap (Lecture 1): BPM adoption phases



## 0. Business analysis

- Roles
- Goals
- Objectives
- AS-IS processes
- Process architecture
- Reengineering plan
- KPIs/Business Metrics

## 1. Process definition

- Process boundaries
- Business value
- Inputs/Outputs
- Process metrics
- Process Owner
- Roles

## 2. Process modeling

- Process models L1+L2
- (BPMN + text)

## 3. Implementation

- Executable models
- BPMN L3, BPEL, other

## 4. Monitoring

- Fault/error detection
- Performance measurement
- Tracking goal fulfillment

## 5. Process Improvement

- Process changes

# Business strategy:

## "A way we want to go"

- An organisation should state **clearly** its purpose and business goals
  - This is important for outside world as much for the company itself
- There has to be a mechanism of goal **achievement evaluation**
- Evaluation has to be **performed regularly**
- Results are used as an **input for continuous business improvement**
- Organisation **reflects changes in Business environment** by adjusting its strategy

# Business strategy: Mission and vision

## Simple and **clear** statements:

- **Vision:**

- Desired future state of the organisation
- Guiding, motivating, Inspiring, **Long term**

**Alzheimer's Association:** "Our Vision is a world without Alzheimer's disease."

**Microsoft:** "Empower people through great software anytime, anyplace, and on any device."

- **Mission:**

- Define current state and purpose
- Answers: what, who, how questions, **Short term**
- Direct relation to goals and objectives

**NatureAir:** "To offer travelers a reliable, innovative and fun airline to travel in Central America."

# Business strategy: Goals and objectives

Desired outcomes, things we want to achieve:

- **Goals**

- The purpose toward which an effort is directed.
- **Long term**, general intentions, hard to measure

**Goal:** Users will get flexible support for their IT devices

- **Objectives**

- Narrow, concrete easy to measure
- Achievable in **mid-to-short term**
- Related to a goal

**Objective:** Any PC related issues resolved in 2 days

**Objective:** Average incident resolution will be less than 6hrs

**Objective:** Network problems will be resolved in 24 hrs

**Objective:** First reply for reported incident will be less than 2 hrs

# Performance measurement

- Metric

- Related to one instance of object/process/service

**Metric:** Incident resolution time

**Metric:** Incident severity

- Performance Indicator KPI

- Current/short term measurement = **input for action**
- Indicator of actual business performance

**KPI:** Number of incidents in progress, number of incidents waiting for input

- Result Indicator KRI

- Result from the past = **input for planning**
- Indicator of recent business performance

**KRI:** Unresolved incidents this month, quartal average incident solving time



# Measurement guidelines

- An indicator has to have a **discrete value** in each moment in time
- Targets have to be set and justified
- Give a frame to your indicators
  - Time frame, milestone, limit
    - Wrong: number of logged incidents
    - Correct: number of logged incidents per week
- Indicators has to be related to a goal / objective / SLA / contract..

# Example

# Library scenario

# Example: Library scenario

- Vision

We foster knowledge of people by providing ultimate **library services**. We make **book rental process easy and accessible** to anybody.

- Mission

We help people to **extend their knowledge in modern way** by **offering access to all major electronic information sources** and provide 24/7 support to our consumers..

# Library scenario: Goals and objectives (cont.)

- **Goal:** Provide access to all major forms of modern electronic information sources
  - **Objective:** Provide access to common internet sources and to 40 major “digital libraries (DL)”
    - **KRI:** Number of accesses per DL / month
  - **Objective:** Sell electronic books and reading devices
    - **KRI:** Turnover and profit in devices sold / Quartal
    - **KRI:** Number of electronic books sold per sold device
  - **Objective:** Provide high-speed WIFI for mobile devices
    - **KPI:** average response time of service today
    - **KPI:** number of simultaneously connected users
    - **KRI:** Monthly service downtime

# Library scenario: Stakeholders involved

- State administrative (Regulations, state funding)
- Library management
- Library employees (staff)
- Readers = Customers
- Banks (online payments)
- Business partners (device resellers)
- Service providers (digital libraries)

# Library scenario: Processes and services

- Objective:  
Provide full-featured 24/7 online IS for readers
  - Process: Register new reader
    - Service: Create reader's record
    - Service: Update reader's details
    - Service: Subscribe reader for service
  - Process: Book reservation
    - Service: Find book according to name or ISBN
    - Service: Retrieve book rental state
    - Service: Reserve book for certain period of time

# Library scenario: Processes and services (cont.)

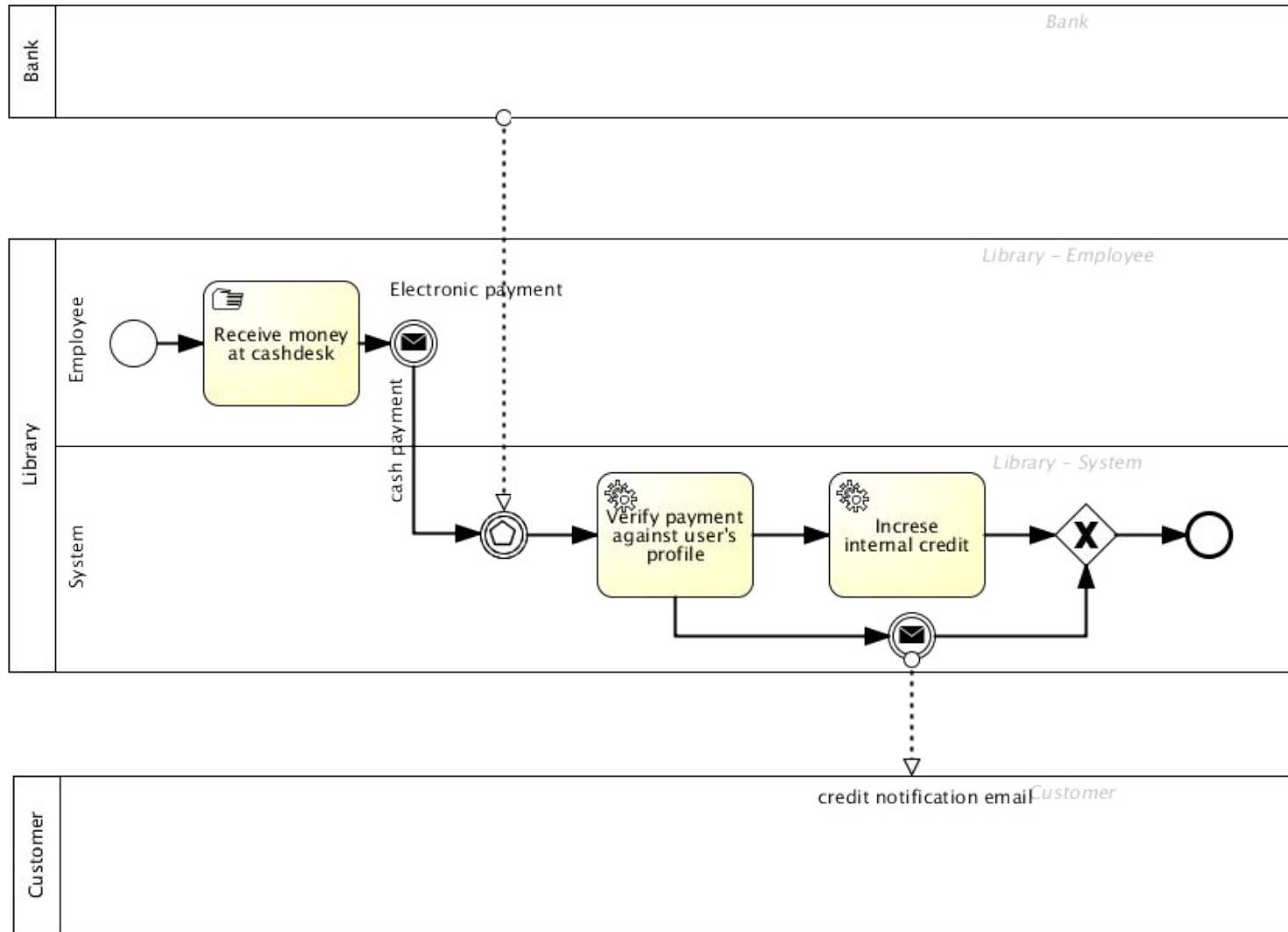
- Objective: Introduce 3-steps-3-minutes e-payment method
  - Process: Direct electronic payment
    - Service: Verify payment credentials
      - Composed service: Create invoice
        - Metric: Manual corrections necessary
      - Service: Retrieve payment details
        - Metric: processing time
      - Service: Retrieve order details
        - Metric: processing time

# Library scenario: Process: Charge internal credit

<b>Process name</b>	<b>Charge internal credit</b>	
<b>Description</b>	Registered <b>customer</b> pay certain amount of money. Money are received either through direct electronic from <b>bank</b> , or at <b>cash desk</b> in cash . <i>Payment</i> is verified against <i>user's profile</i> by <b>system</b> and <i>internal credit</i> is increased for certain <u>amount</u> . <b>Customer</b> receive bill and credit notification.	
<b>Input:</b>	<i>Payment</i>	
<b>Output:</b>	<i>Credit amount</i>	
<b>Data objects:</b>	<i>Payment</i> : payment information <i>User's profile</i> : contain information about user such as personal details and activated payment methods	<i>Credit amount</i> : actual user's credit
<b>Roles:</b>	<b>Customer, System, Cash desk, Bank</b>	
<b>Metrics:</b>	Payment amount	
<b><u>KPI's</u>:</b>	Sum of all charge amounts per day	



# Library scenario: BPMN: Charge internal credit



# Analysis structure recap

- Company name
  - “What do we do”
  - Goal
    - Objective
      - KPI/KRI PI/RI
      - Process
        - Metric
      - **Process**
    - **Objective**
      - KPI/KRI PI/RI
      - **Process**
        - Service
          - Metric
        - **Service**
          - Metric

# FIN

## Questions?

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