BPM analysis and development methodologies

PV207 – Business Process Management

Spring 2014   Jiří Kolář

Last lecture recap

- Process Execution Behind the Scene
- Best Practise of Process Modelling
- Basic Design Mistakes
- 7 Guidelines of Process Modelling
- From Abstract to Runnable
- Process Redesign
- Conclusion

Lecture overview

- Why a methodology for BPM development?
- BPM and SOA again
- CBM in a nutshell
- Methodologies
  - Top down
  - Bottom up
  - Meet in the middle

- Library scenario:
  - Strategy and vision
  - Goals, objectives and KPIs
  - CBM heat map
  - Stakeholders identification
  - Business components
  - Processes and services
 - Process description
  - Process BPMN diagram

Why we need a methodology for BPM-oriented development?

- BPM **differ significantly from traditional data-based approach** to system design
  - Special anlysis & 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**

Relationship of SOA 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
- At least a **basic SOA infrastructure** is useful for well implemented BPM solution
- SOA infrastructure provide flexibility we need to achieve process evolution and improvement

Relationship of SOA and BPM (cont.)

Source: SOA Community of Practice, SOA Solution Stack Project
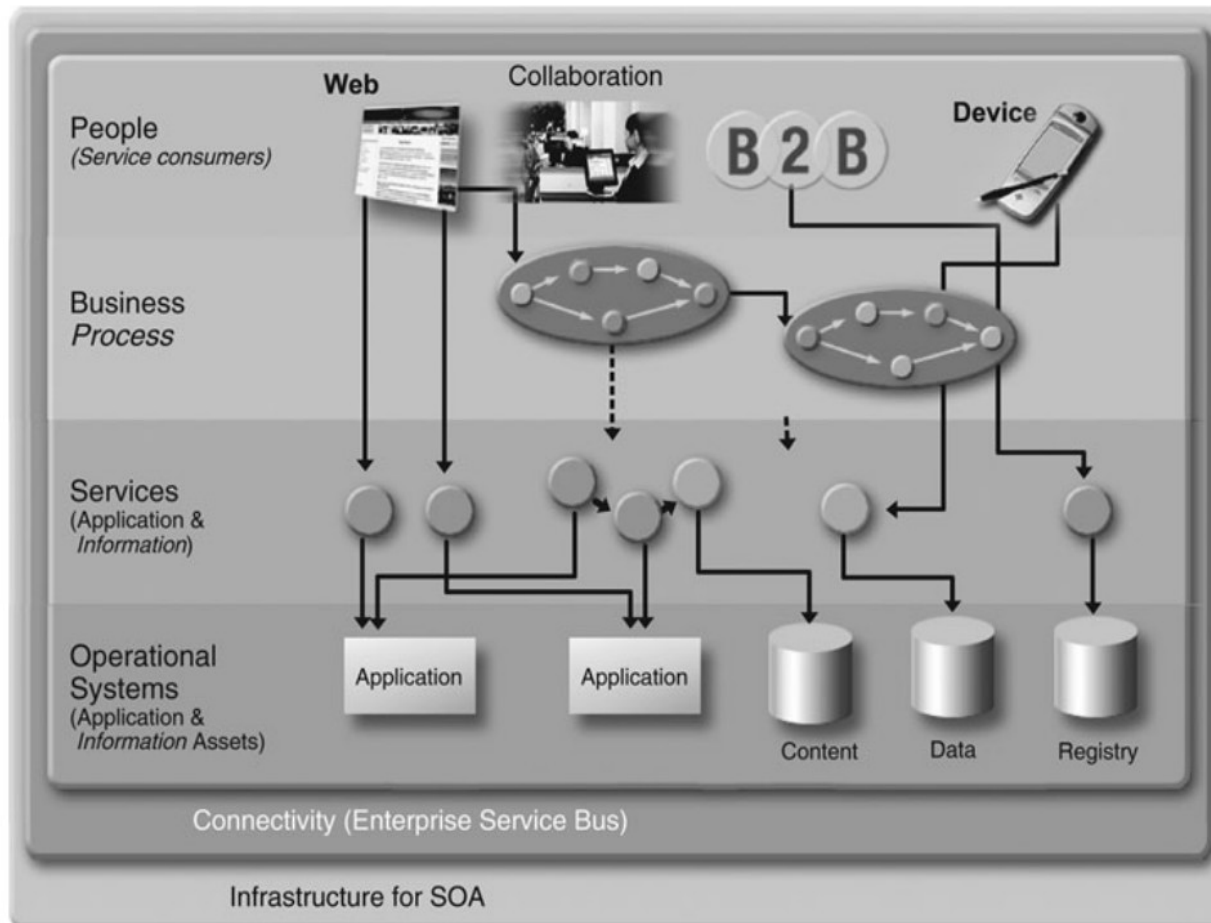
Relationship of SOA and BPM (cont.)
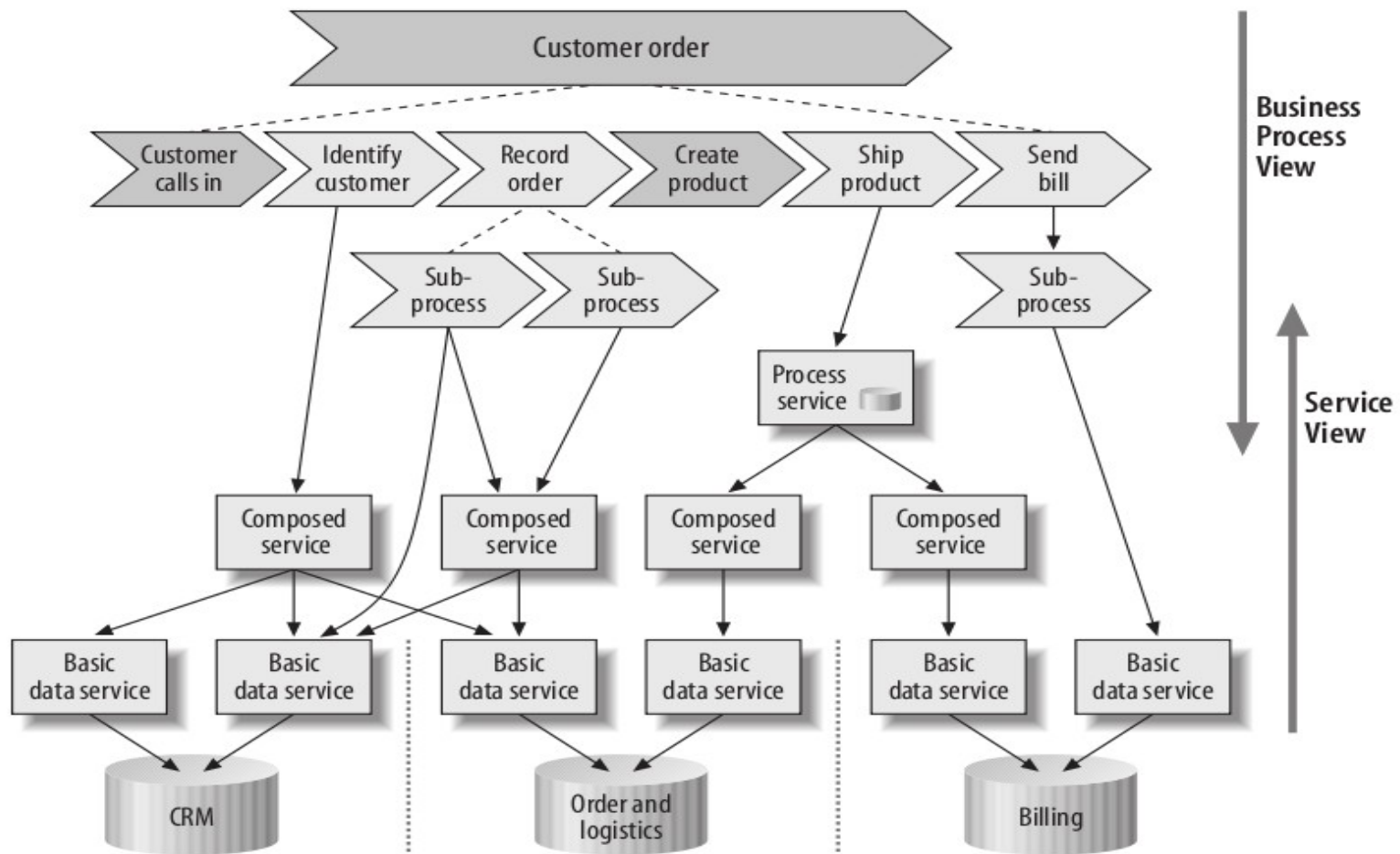
CBM in a nutshell

- Component Business Modeling is a technique introduced by IBM for **business modeling and analysis**
- CBM **splits enterprise to separate "buliding blocks"** - business components

    *"A **business component** is a grouping of the people, technology, and resources delivering specific business value and able to operate independently" --Principal architect for SOA, IBM*

- **Example:** Marketing department
- CBM is primary Business modeling concept
- Very important in **outsourcing context**

CBM in a nutshell (cont.)

- Each Business Component provide certain **business competencies**
- Ex.: Competencies of marketing department
  - Advertising
  - Product promotion
- We **map our processes to competencies**

Top down BPM development

- Sum business **strategy and vision**
- Identify/Define **business goals** and **obejctives**
- Identify **business components** and **competencies**
- Define/Identify **processes and roles**
- Map to component competences
- Reuse/Implement required **services** and **SW components**

CEO & Board

Business Units

CIO

Architecture Boards

Projects

Data Center

Top-down
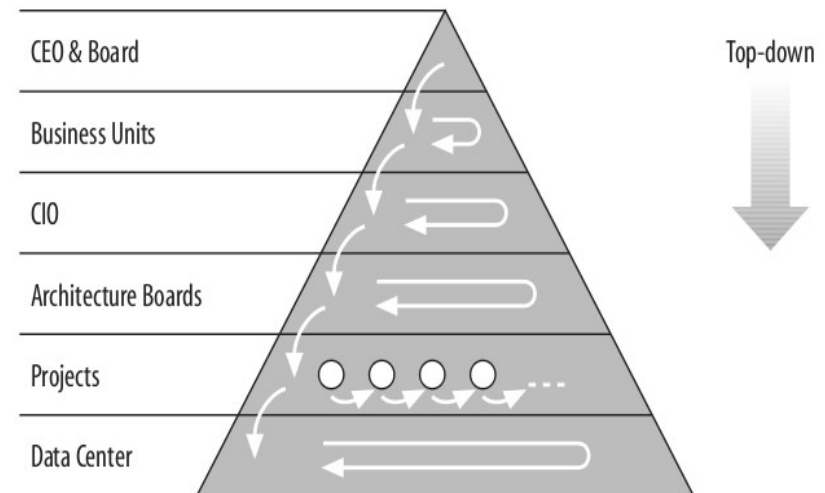
Bottom up BPM development

- Identify **services** on lowest level (code)
- Identify **composed services**
- **Discover processes** (by hand, algorthmic)
- **Refine processes**
- **Map processes** to Business Components (CBM output)
- **Align** with **goals and strategy**
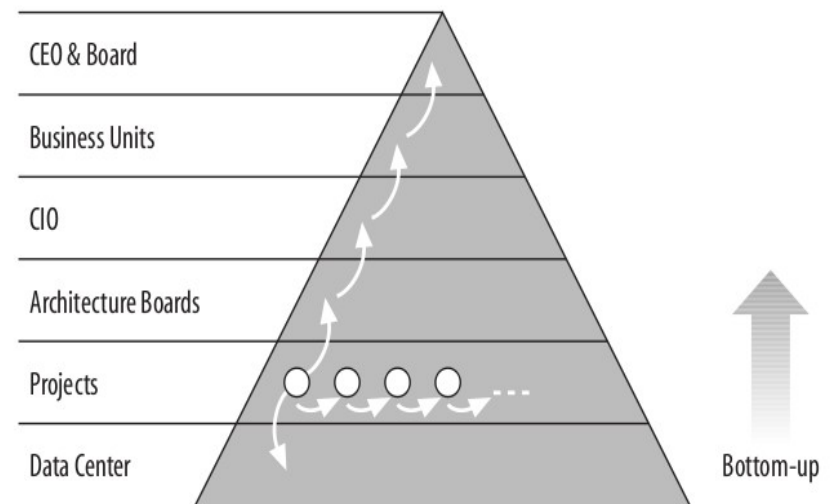
3 meanings of word "service"

- **"Business" service**
  - Restaurant owner can register his restaurant to Google database and be shown in Google Maps
  - Defined by contract / service offering
- **"Technical" service**
  - Users can search for their favourite restaurant in Google Maps
  - User interface for "Human task"
- **"Web" Service**
  - Google provide Web Service API for retrieving location of certain address
  - WSDL interface definition
  - Request - response model

Reality: Meet in the middle

In parallel:

- Top down
  - Define/refine strategy and vision
  - Identify/refine goals and components
  - Define KPI/KRI
  - Identify components
  - Identify/define processes

- Bottom up
  - Identify existing services and SW components
  - Identify composed services
  - Assign to processes

Business strategy:
"A way we want to go"

- Every organisation should state **clearly** it's purpose and it's goals
  - This is important for outside world as much for the company itself
- There should be a mechanism for evaluation of success in achievement of those goals
- Such evaluation should be performed regularly and it's results should be used as an input for continuous business improvement
- Organisation should reflect changes in Business environment by adjusting it's

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
  - Answer: 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: Students will gain a greater appreciation for poetry.

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

  Objective: read at least 10 poems

  Objective: attend 2 live poetry readings

  Objective: identify 4 different poems used in lyrics of modern music

  Objective: write a poem containing 3 verses

Performance measurement

- ## Metric
  - ○ Standard measurement
  - ○ Related to one instance of object/process/service

  Metric: Incident resolution time

  Metric: Incident severity

- ## Performance Indicator/ Key PI ~ KPI
  - ○ Actual/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/ Key RI ~ KRI
  - ○ Result from the past = input for planning
  - ○ Indicator of recent busness performance

  KRI: Unresolved incidents this mont, quartal average incident solving time

Measurement guidelines

- Make sure you are able to compute or estimate values for your indicators
- Make sure you give a frame to your indicators
  - Time frame, milestone, limit
  - Wrong: number of logged incidents
  - Correct: number of logged incidents per week
- Make sure you have a driver for measurement ~ reltion of your indicator to a goal/ objective / SLA / contract..

Questions?
Break 10mins

Example: Library scenario

Strategy and vision:

We want to provide best **library services in town** by offering **easily accessible book rentals** through **simple time saving rental process.**

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 information consumers..

- 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
    - KRI: Number of accesses per library / month
  - Objective: Sell electronic books and reading devices
    - RI: Turnover and profit in devices sold / Quartal
    - KRI: Number of electronic books sold per sold device
  - Objective: Provide separate high-speed access for mobile devices
    - KPI: average response time of service today
    - PI: number of simultaneously connected users

Library scenario: CBM heat map

	Business administration	Front office (Book rental)	IT department	Finance department
Directing	Business planning	Rental planning	IT infrastructure planning	Financial planning
Controlling	Business unit tracking	Rentals management	IT management	Accounting
	Staff appraisals	Services management	Infrastructure monitoring	
Executing	Purchasing books	Renting book	Systems maintenance	Billing
	Services administration	Providing services	system development	
		Rentals	Providing IT support	Handling penalties

Library scenario: Stakeholders involved

- State administrative (Regulations,state funding)
- Library management
- Library employees (staff)
- Readers
- 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
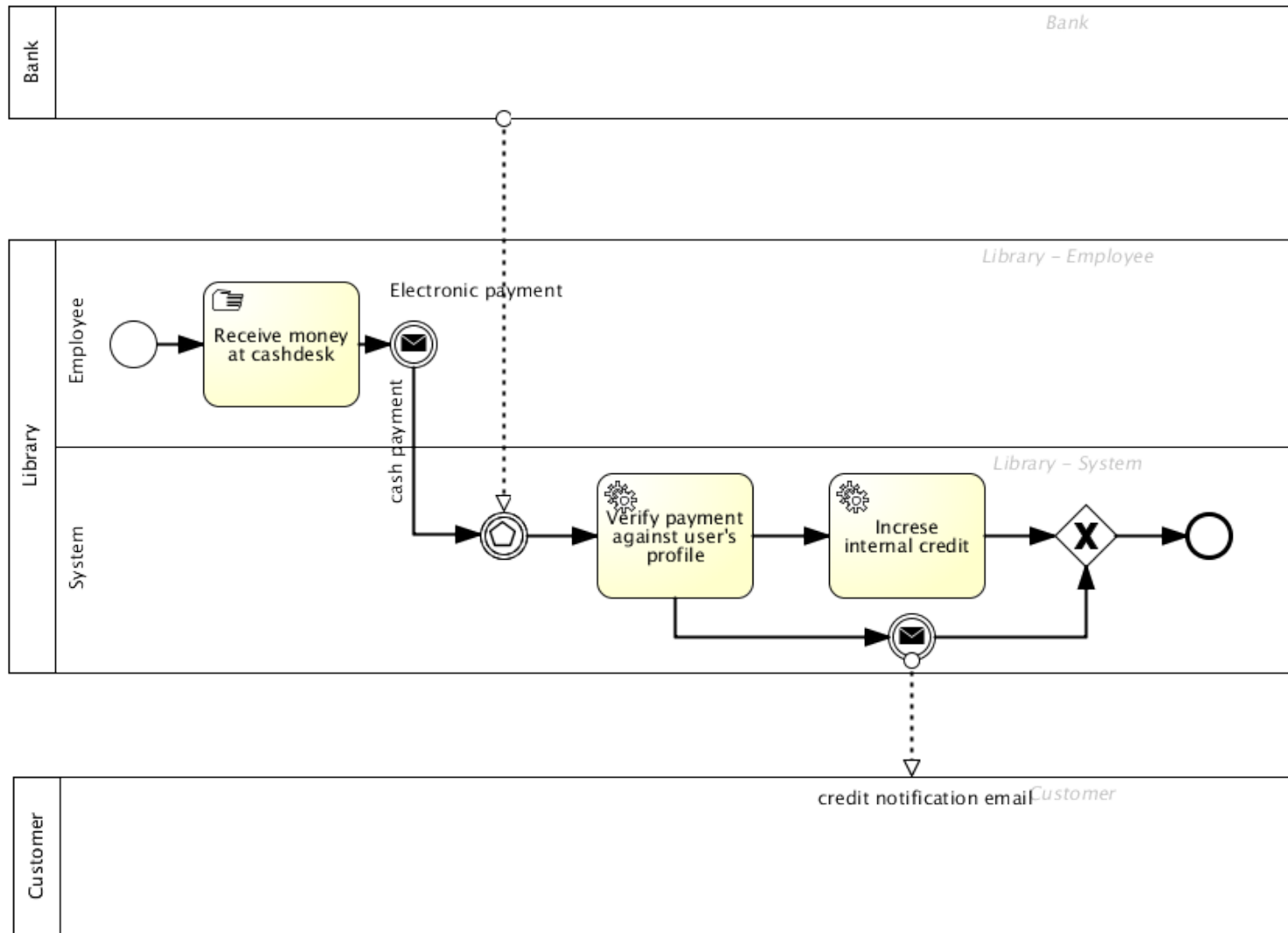   - Service: Reserve book for certain period of time

Library scenario: Processes and services (cont.)

- Objective: Introduce 3-steps-3-minutes e-payment method
  - Process: Direct electronic payment
    - Service:Verify payment creditals
      - 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

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

Library scenario:
BPMN: Charge internal credit

Analysis structure recap

Strategy and vision (Clean and simple text)

- Goal
- Goal
  - Objective
  - **Objective**
    - KPI/KRI PI/RI
    - Process
    - **Process**
      - Service
        - Metric
      - **Composed Service**
        - Service
        - **Service**
          - Metric
          - Metric

FIN
Questions?

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