S-BPM REVISITED

‘IT IS NOT JUST A WORD, IT IS A SENTENCE!’

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Knowledge Management Competence Center
S-BPM REVISITED

Achievements and Roadmap

• Why Subject Orientation?
• Essentials
• Modeling – the central activity (education)
  • Moving closer to business reality as social interaction
• Execution – coupling experience to organizational development
  • Moving closer to operation (incl. double loop learning)
• Further steps
WHY SUBJECT ORIENTATION?

What are the most important business factors?

- Labor
- Non-labor inputs
- Innovation
- Infrastructure
- Demand (proximity)
- Climate

(‘Next’shoring factors) (McKinsey, 2014)
WHY SUBJECT ORIENTATION?

Labor

Non-labor inputs

Infrastructure

('Next'shoring factors)
(McKinsey, 2014)

Innovation

13.000

Boxes

Container

Polymer powder

→ 250.000

→ 

+ ??

Servizitation requires shift from resource-based economy to knowledge-based process economy

• Global Innovation for Local Markets

Polymer powder

Container

→ 250.000

+ ??
WHY SUBJECT ORIENTATION?

- Labor
- Non-labor inputs
- Infrastructure

Innovation → Demand (proximity) → ‘Global Innovation for Local Markets’

- ('Next'shoring factors) (McKinsey, 2014)
- Social Interaction (Gartner, 2014)

Insight to In-Market
Senior Vice President Pete Durette on MWV’s approach to innovation, in an interview with FoodBev.com.

An Entrée to a More Authentic Experience
SmartFare™ stays sturdy and cool to the touch from the oven to the table for easier serving and dining. Discover how...

Packaging Matters for Food Safety in China
60% of food safety incidents in China are related to packaged foods. Quentin Yan, director of strategy for Food & Beverage China, on how packaging can play a role. Read the insights...

6 months → 3 months → ’on the fly‘
WHY SUBJECT ORIENTATION?

Labor

Non-labor inputs

Infrastructure

Demand (proximity)

Innovation

• New material
• Product Design
• Business Processes
• Information Systems
• Business Models

(‘Next’shoring factors) (McKinsey, 2014)
WHY SUBJECT ORIENTATION?

Labor

Non-labor inputs

Infrastructure

Innovation

Demand (proximity)

• New material
• Product Design
• Business Processes
• Information Systems
• Business Models

⇒ Complexity increases
⇒ Competition remains

⇒ Time is critical
⇒ Social interaction is essential

(‘Next’shoring factors) (McKinsey, 2014)
WHY SUBJECT ORIENTATION?

Labor  Non-labor inputs  Infrastructure

Innovation  →  Demand (proximity)

• New material
• Product Design
• Business Processes
• Information Systems
• Business Models

Social Interaction

Today  Tomorrow

Added Value

Design  Production  To Market  Production Activities

(‘Next’shoring factors) (McKinsey, 2014)
WHY SUBJECT ORIENTATION?

Labor

Non-labor inputs

Infrastructure

Innovation

Demand (proximity)

- New material
- Product Design
- Business Processes
- Information Systems
- Business Models

Servizitation requires shift from resource-based economy to knowledge-based process economy (Molli, 2014)

(‘Next’shoring factors) (McKinsey, 2014)

(Roos, 2014)
WHY SUBJECT ORIENTATION?

Labor
Non-labor inputs

Infrastructure

Innovation
Demand (proximity)

- New material
- Product Design
- Business Processes
- Information Systems
- Business Models
- Servizitation requires shift from resource-based economy to knowledge-based process economy

Complexity increases
Competition remains
Time is critical

Concepts for Servizitation

(‘Next’shoring factors) (McKinsey, 2014)


**SUBJECT ORIENTATION**

- **Labor**
  - Non-labor inputs

- **Infrastructure**

- **Demand (proximity)**
  - New material
  - Product Design
  - Business Processes
  - Information Systems
  - Business Models

- **Innovation**
  - ‘Next’shoring factors
(McKinsey, 2014)

- **Social Interaction**

- **S-BPM**
  - Complexity increases
  - Competition remains
  - Time is critical

  - Communication +
    Micro-intelligence
    (knowledge-‘ability’)
S-BPM Constituents

Organization = Communication

Natural Language: Subject, Predicate, Object

Subject Orientation: Parallel Activities

Specification Scheme (PASS)

Social systems:
- Smallest unit of organizations is communication
- Organizations are social systems

Luhmann

Process algebra:
- Calculus of Communicating Systems (CCS)
- Communicating Sequential Processes (CSP)

Milner und Hoare

Enhancements
- Object orientation
- Input Pool concept
- Graphical notation

Fleischmann

Abstract State Machine (ASM):
- Formal Semantics

Börger
S-BPM Modeling –

All-to-All Networking or Dedicated Interaction?

Restriction or Construction
S-BPM Modeling –
Modeling by Restriction / Construction

Business process definition: Allowed sequences of actions and interactions

Universal Process: Allows all interactions like eMail

What is allowed in a process specification?

Restriction

Construction

Empty process: Nothing is defined or allowed
Organizing = Communicating

Subjects: - represent abstract actors in a process (technical or human)
- send and receive messages

Messages: produced and consumed by subjects

Process: structures the actions of each subject and coordinates the required communication among the subjects
Actor- / System-specific Modeling

Customer

Order Handling

rest of subject behaviour

rest of subject behaviour

Prepare order

order prepared

send order

An: Order Handling order

wait for confirmation

Von: Order Handling order confirmation

check delivery

Wait for product

Von: Shipment deliver product

check order

order checked

Confirm order

Hand over to shipment

An: Customer order confirmation

An: Shipment delivery request

wait for order

Von: Customer order

end

end

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16
Moving Closer to Reality = Capturing Dynamics

A customer changes an order any time.
An order change request during handling the order is allowed and accepted.
An order change request after delivery has already started is not allowed and thus, rejected.
Dynamic Capability Development

Customer

- Prepare order
- order prepared
- send order
- An: Order Handling order
- \(\rightarrow\) wait for confirmation
- Von: Order Handling order confirmation
- check delivery

Nondeterministic event guard

Wait for product

- wait for confirmation
- Von: Shipment deliver product
- Von: Order Handling order confirmation

Rest of subject behaviour

Wait for product

- change order
- change order
- An: Order Handling change order
- Wait for reaction
- Von: Order Handling order change accepted
- Von: Order Handling order change rejected

Back to Wait for product
Dynamic Capability Development

Order Handling

- wait for order
- Von: Customer order
- check order
- order checked
- Confirm order
- Hand over to shipment
  - An: Customer order confirmation
  - An: Shipment delivery request

- back to last state in main path

all states following: Hand over to shipment

- Von: Customer change order
- check order
- order checked
- reject order change

- An: Customer order change rejected

- back to hand over to shipment

S-BPM Revisited
The customer starts a subject which observes prices for the ordered product. Depending on the retrieved price, the customer changes the order.
Complex Event Handling

Price Observer

CEP Engine
Customer Behavior

- Prepare order
  - order prepared
  - send order
    - An: Order Handling order
      - Start observer
        - An: Price observer observe prices
          - wait for confirmation
            - Von: Order Handling order confirmation
            - Von: Price observer Higher price
              - change order
                - An: Order Handling change order
                  - Wait for reaction
                    - Von: Order Handling order change accepted
                      - Von: Order Handling order change rejected
            - Von: Shipment deliver product
              - check delivery
                - Wait for product
                  - wait for confirmation
                    - Von: Order Handling wait for product

rest of subject behaviour

Back to
Wait for product
New Form of Governance

Actors

Facilitators

Governors

Experts

INSTITUTE OF INNOVATIVE PROCESS MANAGEMENT

CBI 2014

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Moving Closer to Reality = Contextual Articulation

Articulate, Negotiate & Experience
Comprehend → Metasonic Touch
https://www.youtube.com/watch?v=aDxWI1rgg1Q
Contextual Articulation - S-BPM BuildBook
# Roundtrip Support – Tool Chains

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<th>BPM Activity</th>
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**Manual Input**
- Graphical PC interfaces:
  - S-BPM-based
  - BPMN-based
  - EPC-based

**Automated Transformation**
- Brown paper
- Comprehand (S-BPM-based)
- Rural Comprehand (S-BPM-based)
- BuildBook (S-BPM-based)
- T-BPM (BPMN-based)

**Non-Tangible Interaction**
- Database/Repository
- Automated workflow generation
- Partially automated workflow generation
- Programming (e.g., in BPEL)
Architecting

Business

Application

Technology

Tools supporting the S-BPM Lifecycle (Activity Bundles)

Private or public cloud
Connecting process across processes and clouds

Passive Structure  Behaviour  Active Structure
Organizational Implementation
Technical Implementation - User Interface Design
Technical Implementation - Agent-based Execution

Business Process

Subject-oriented System

Subject

Predicate

Object

Do

Receive

Send

Message

Business Object

Multi-Agent System

Role

Group

Agent

S-BPM Revisited
The Future: Conceptualization of Micro-Intelligence through Subjects

Environment

Observation

Actions

Input pool

Subject per sensor

Receive Process / Decision Send

Input pool

Sensors

Agent

Perception
Decision
Action

Effectors / actuators

Subject

Receive Process / Decision Send

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The Future: Large Scale System Integration

Abstracting Subjects

Behavioural Interface = Sequence in which messages are exchanged between the involved parties
IMPLICATIONS

Labor

Non-labor inputs

Infrastructure

Innovation

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Servizitation requires shift from resource-based economy to knowledge-based process economy

Social Interaction

Communication +
Micro-intelligence (knowledge-‘ability‘)

(‘Next’shoring factors)
(McKinsey, 2014)
**IMPLICATIONS**

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(‘Next’shoring factors)
(McKinsey, 2014)
S-BPM Revisited

Behavior Encapsulation and Interaction for Modeling and Execution

• Focus on functions = output-oriented
• Focus on behavior = outcome-oriented
• New models of governance

→ Social Interaction

• Variety of accomplishing tasks and changes on the fly
• Coopetitiveness replaces competitiveness

→ Interoperability

• Communication is visible, functions are not, protecting Know-how
• Servizitation intertwining service and production industry
  (all-in-one concept)
S-BPM Revisited

It is not just a word – it is a sentence!

It is not just **modeling** – it is **contextual articulation**!

It is not just **experiencing** – it is **seamless execution**!

It is not just a **functional representation** – it is **social interaction in business context**!