Business Process Management
State of the Art, Future and Research Potential

BOC Group
Dr. Stefan Junginger
Member of the Board
Content

1 Introduction
2 Process Management as an Organisational Concept
3 Technology/IT
4 Tools and Techniques
5 Conclusion
Gartner CIO Survey: Top 10 Business Priorities

Prio 1: Business Process Improvement

Prio 2: Attracting and Retaining New Customers

Prio 3: Creating New Products and Services (Innovation)

Prio 4: Expanding into New Markets and Geographies

Prio 5: Reducing Enterprise Costs

Prio 6: Improving Enterprise Workforce Effectiveness

Prio 7: Expanding Current Customer Relationships

Prio 8: Increasing The Use of Information and Analytics

Prio 9: Targeting Customers and Markets More Effectively

Prio 10: Acquiring New Companies & Capabilities
Overview

Process Management as an Organisational Concept

Technology/IT

Tools

1990 - 2008
State of the Art - Future

Research Potential
Content

1. Introduction
2. Process Management as an Organisational Concept
3. Technology/IT
4. Tools and Techniques
5. Conclusion
Process Management as an Organisational Concept: History

- 1990: Quality Management/ISO 9000
- 1990: BPR
- 2008: Process costing/Activity-based Costing
- 2008: Six Sigma … in Service Organisations

Research Potential

1990 - 2008: State of the Art

Future
Process Management

**Positive:**
- Progress in reducing costs, improve quality, raise pace, increase rentability by process management
- Many companies reengineer their processes continuously
- Responsibilities have to be defined more comprehensively
- Additional training for employees
- Central elements of company culture should be team work, customer orientation, responsibility

**Negative:**
- Often high investments – no outcome
- Many failures through quality problems, poor morale
- Not only working processes have to be changed
- Companies are not sure about how to improve processes

A process model is a structured collection of practices that describe the characteristics of effective processes.

**A process model is used**

- To help set process improvement objectives and priorities
- To help ensure stable, capable and mature processes
- As a guide for improvement of project processes

**A process model provides**

- A place to start improving
- A framework for prioritizing actions
- A way to define what improvement means

Source: Software Engineering Institute, Carnegie Mellon University
Process and Enterprise Maturity Model (PEM)

Reengineering processes through PEM

**PEM model:** Process and Enterprise Maturity Model
- Shows, if prerequisite for changes are provided
- Helps to eliminate deficits
- Measures progresses
- Model does not describe how a process should look like
- System can be applied to all areas in the company
  – avoids chaos and despair

Source: The Process Audit, Michael Hammer
Harvard Business Manager, 2007
Success factors of the PEM model

- Process determinates
  - process design: good understanding of processes
  - employees: knowledge existent
  - responsibility: person responsible for processes
  - infrastructure: processes supported
  - indicators: can results be measured

- Company competences
  - leadership: support from to management
  - company culture: customer and service-oriented
  - experience and skills
  - steering: systems and structures
Capability Maturity Model Integration

Process improvement through CMMI

- Quality of a system is influenced by quality of process

- Process, people and technology are the major determinants of product cost, schedule and quality

- The process is the "glue" of the process-people-technology traid that ties the traid together

- A CMMI model describes the characteristics of effective processes

Process improvement should be done to help the business - not for its own sake

Source: Software Engineering Institute, Carnegie Mellon University
The 5 levels of the CMMI

Level 1
No processes organised

Level 2
Some processes organised

Level 3
Processes organised

Level 4
Processes managed

Level 5
Processes optimised
State of the Art in Most Organisations

Company strategy

Efficiency Objectives

- Process Project 1
- Process Project 2
- Process Project 3

Objectives and bonuses of the employees do **NOT** depend on process objectives
Company strategy

Continuous process improvement

Process objectives derived from company strategy

Process owners

Bonus of process responsibles defined by process objectives

(= Integration with HR-system)
What is BOC offering?

→ ADONIS – Web-Service based Solutions

Framework and mechanism to implement solutions such as process portals.
What is BOC offering? ➔ ADONIS Process Portal

ADONIS Process Portal

- Release-Workflow
- email generation
- Feedback mechanisms
- …

Online access!

- Process models
- KPIs (e.g. ADOscore)
- Documents, HR-information

DMS

HR
Research Potential

• Organisational techniques are constantly changing (and improving?)

• Development of organisational techniques which address new challenges

• In most organisations the "Vision of Process Management" is not yet reached
  ➔ What are the obstacles?
  ➔ Development of methodologies to implement the "Vision of Process Management"
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Technology: History

- Enterprise Resource Planning Systems
- SOA
- EAI
- BPMS (BPEL)
- Workflow
- Client/Server
- Web Architectures

1990 - 2008

State of the Art

Future

Research Potential
IT in Most Organisations

Source: Gartner
Service Oriented Architecture (SOA)
The Workflow Idea

Buildtime

Graphical Editor

WMS - Objects

Runtime

Internal Representation

Aktion...
Akteur...
Program...

File Representation

WMS-DB

Datei-representation (FDL) WMS - DB
## Business Process Models and Workflow Templates

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business Graph = CIM</strong></td>
<td>(Business Process Modelling Language)</td>
</tr>
<tr>
<td><strong>Workflow Graph = PIM</strong></td>
<td>(extended Business Process Modelling Language)</td>
</tr>
<tr>
<td><strong>Execution Graph = PSM</strong></td>
<td>(Language of the BPMS, vendor-specific BPEL)</td>
</tr>
</tbody>
</table>

**Execution Model**
- **Legacy System** (no modelling)
- **UML Models**
- **Reference Models** (Standard Software)
What is BOC offering?

⇒ **ADONIS®** as Starting Point in IT Projects
What is BOC offering?

Enterprise Architecture Management Tool ADOit®

Methodology and Objects in ADOit®
Research Potential

• The SOA concept enables a new approach to manage IT (of course, not everything is new in SOA but the development of Web standards enables a much easier integration)

• ➔ Development of methodologies to implement SOA (it not so simple that you just need to model business processes!)

• However, most organisations have large problems to deal with their IT

• ➔ Enterprise Architecture Management to enable IT governance
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State-of-the Art in Process Modelling: Flow Charts

SP Credit Processing and Granting of Credit

Check if fax information are complete

Documents complete?

Yes

Check credit standing

Credit standing negative?

Yes

Notify customer

No

Contact branch or customer

No

Calculate value of securities

Accumulate liabilities

Yes

Calculate value of securities

Accumulate liabilities

Documents complete?

Yes

Check credit standing

Credit standing negative?

Yes

Notify customer

No

Contact branch or customer

No

Calculate value of securities

Accumulate liabilities
New Approach: Cooperation Charts

1. Manager
2. Customer
3. signed
4. Manager
5. Customer
RACI Concept

RACI is a technique to analyse and describe the roles and responsibilities of various teams or people in delivering a project.

<table>
<thead>
<tr>
<th>Activity</th>
<th>R(esponsible)</th>
<th>A(ccountable)</th>
<th>C(onsulted)</th>
<th>I(nformed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity 1</td>
<td>R</td>
<td>C</td>
<td>A</td>
<td>I</td>
</tr>
<tr>
<td>Activity 2</td>
<td>A</td>
<td>R</td>
<td>I</td>
<td>C</td>
</tr>
<tr>
<td>Activity 3</td>
<td>A</td>
<td></td>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>

RACI-Matrix

- For each activity only one role
- clear description of responsibles
- roles can change
RACI Notation
BOC Group (www.boc-group.com)

What BOC is offering?

⇒ Highlights of ADONIS® 4.0

☑ Layout Algorithms
  - Different forms of representation (e.g. with/without swimlanes)
  - Layout algorithms for frequently needed scenarios (tree arrangement, left/right ↔ top/down)

☑ Improved “Usability”
  - Result windows of Analysis and Simulation are “dockable and modeless”⇒ improved, easier navigation
  - Possibility of dynamic notebooks
  - New functions for handling swimlanes (move, copy & paste)
  - Support when adding new objects
  - Improved numbering function
  - Enhanced output of analysis results
  - Navigation using connector marks, and more …

☑ Extended publishing possibilities for HTML and Word

☑ Method- and function block supporting versioning and release workflow

☑ Enhancements for Versioning/Release Workflow in ADONIS
  - extended messaging mechanisms
  - showing the status in the model explorer
Example for the automatic lay-outing of a process with/without swimlanes (based on a defined reference attribute)

Swimlanes are automatically created based on the responsible roles

"normal" – without swimlanes

Layout with swimlanes

What BOC is offering? ➔ Different Views in ADONIS® 4.0
Research Potential

• Process modelling is far from solved

• ➔ Development of modelling languages which fit better than the current ones to represent processes
  ♦ Process modelling languages for specific types of processes (e.g. project-oriented ones)
  ♦ Business sector-specific process modelling languages?!

• Based on the process modelling languages:
  ➔ Development of evaluation techniques (e.g. simulation)
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Conclusion

• Business Process Management is top priority for most organisations

• Therefore, it should be an important topic in teaching

• In every dimension (organisational concept, technology/IT and tools/techniques) there is still a lot of space for improvement (research!)

• We are thank you for your participation in BOC's University Programme and are looking forward to learn about your future research results