Business Process Modelling Seminar
Modelling in the Australian Practice
- Preliminary Results from an ACS Survey -

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Queensland University of Technology
Centre for Information Technology Innovation

Auckland, 20 February 2003
Survey: Modelling in Practice

• Research questions
  – What are the purposes of modelling?
  – What are popular tools and techniques?
  – What are success factors and major issues related to modelling?

• supported by the ACS
• Online questionnaire
• July / August 2002
• 312 responses with demographics
• 370 responses in total
• 1567 (average) members interested in area
• Effective relevant response rate – 23.6 percent
Online Survey

How relevant are the following purposes to your modelling activities?

<table>
<thead>
<tr>
<th>purpose</th>
<th>not relevant</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>highly relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity-based costing</td>
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<tr>
<td>Auditing</td>
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<td>Certification / quality management</td>
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<tr>
<td>Change management</td>
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<tr>
<td>Database design and management</td>
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<td>Human resource management</td>
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<tr>
<td>Knowledge management</td>
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<tr>
<td>Business process documentation</td>
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<tr>
<td>Improvement of internal business processes</td>
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<td>Improvement of collaborative business processes</td>
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<tr>
<td>Simulation</td>
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<tr>
<td>Software selection</td>
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<tr>
<td>Software configuration</td>
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<tr>
<td>Software development</td>
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<td>End user training</td>
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<tr>
<td>Workflow management</td>
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<tr>
<td>Design of Enterprise Architecture</td>
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</tr>
</tbody>
</table>
The Most Popular Modelling Purposes

- Database design and management
- Improvement of internal business processes
- Software development
- Business process documentation
- Workflow management
- Improvement of collaborative business processes
- Design of Enterprise Architecture
- Change management
- Knowledge management
- End user training
- Software configuration
- Software selection

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The Top Ten Modelling Techniques
- in the past

Data flow diagram
ER diagram
System flow charts
Structured charts
RAD (rapid application development)
Workflow modelling
State transition diagram
JAD (joint application development)
UML (unified modelling language)
Event-driven process chains
The Top Ten Modelling Techniques
- currently

ER diagram
Data flow diagram
System flow charts
Workflow modelling
RAD (rapid application development)
UML (unified modelling language)
Structured charts
Event-driven process chains
JAD (joint application development)
State transition diagram
Object role modelling
The Top Ten Modelling Tools - in the past

- Visio
- iGrafx FlowCharter
- Oracle9i Developer Suite
- Rational Rose
- System Architect
- AllFusion ERwin Data Modeler
- Advantage Developer Series
The Top Ten Modelling Tools
- currently

- Visio
- Rational Rose
- iGrafx Flow Charter
- Oracle9i Developer Suite
- AllFusion ERw in Data Modeler
- WorkFlow Modeler
Business Process Modelling

Michael Rosemann

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Centre for Information Technology Innovation
Cost Development

Influence on costs

Actual costs

$
The IT Hype Curve

Visibility

Time

Need for Business/IT Alignment

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Jobs Decline

Advertisements

Time

IT & T

Non IT Sectors

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The Australian, 10 December 2002, p. 25.
Business Process Models as Communicator
Origins of Business Process Modelling

- Data Modelling
- Information Engineering
- Business Process Reengineering
- Enterprise Architectures
- Object Orientation
- Workflow Management

Business Process Modelling
„Reengineering is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed.“

[Hammer, Champy 1993]
What would you change ...

<table>
<thead>
<tr>
<th>Selections in %</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>More attention to process optimisation</td>
</tr>
<tr>
<td>65</td>
<td>Go ahead intensively and systematically according to the company goals</td>
</tr>
<tr>
<td>60</td>
<td>Pay more attention to the area spanned cooperation within the concepts</td>
</tr>
<tr>
<td>50</td>
<td>Provide simultaneous implementation of a management information system</td>
</tr>
<tr>
<td>55</td>
<td>Recruit the project management out of the relevant department</td>
</tr>
<tr>
<td>45</td>
<td>Intensify trainings</td>
</tr>
<tr>
<td>35</td>
<td>Stronger including of the works council</td>
</tr>
<tr>
<td>35</td>
<td>Enforce changes more courageously</td>
</tr>
<tr>
<td>30</td>
<td>Better proofs of economy</td>
</tr>
<tr>
<td>20</td>
<td>Avoid big-bang implementations</td>
</tr>
</tbody>
</table>
A process is the self-contained, temporal and logical order (parallel and/or serial) of those activities, that are executed for the transformation of an business object with the goal of accomplishing a given task.
The Innovation of Process Management

- the innovation is the **focus** on processes
- increase awareness of processes
- make processes explicit → model processes
- manage processes actively
- manage processes continuously
Recent Contacts
Purposes of Process Modelling

- Process Documentation
- Process Improvement
- Risk Management
- Knowledge Management
- Activity-based Costing
- ES-Implementation/Upgrade/Benefits Realisation
- Software Selection
- Document Management
- Workflow Management
- CommonWealth Bank
- QUT

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Centrelink Call

• Purpose:
  – Prepare selection of a workforce management system
  – Understand and improve existing processes

• Deliverables:
  – Business framework, value chains, process models, issue registers
Department of Defence

- Purpose: analysing and improving the change management process
- Deliverables: as-is and to be models (2 mths., 12 mths), comprehensive registers with issues and improvement proposal
- Mode: Process Analysis Centre
Health Insurance Commission

- Purpose: redesign of the contact centre architecture
- Deliverables: as-is and to be models (2005), Comprehensive registers with issues and improvement proposal
- Mode: Process Modelling Forum
Business Process Excellence
Chief Process Officer (CPO)

- Change management expert
- Facilitates the management of the entire business process lifecycle
- Provides solutions for process modelling, process simulation and process performance measurement
- Is familiar with reference process models
- Identifies appropriate IT solutions such as workflow management, EAI, web services
As-Is Phase

Model User
- Uses the process description as source of information for the required processing steps
  - Discusses improvement proposal with process manager
    • Enters improvement proposal into database

Improvement Manager
- Collects improvement proposal
  - Defines measures
  - Assigns responsibilities/dates/priorities and status
  - Monitors the conversion of measures and dates

Process Manager
- Discusses improvement proposal with model user
  - Safeguards process execution
  • Is responsible for the real processes and the conversion of modelled processes

Modeller
- Customises models based on defined measures
  • Changes status of improvement proposal
Business Process Management Lifecycle

- Process identification
- Process modelling (as-is)
- Process analysis
- Process improvement
- Process implementation
- Process execution
- Process monitoring/controlling
Collaborative Process Design

Enterprise Application Integration (EAI)

Supplier

Enterprise

Customer

Business Processes

Business Processes

Business Processes
Visibility of Customer Interaction Cycle

Customer

Company

Inquiry

Quote

Order

Goods/Invoice

Payment

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Facets of BPM
<table>
<thead>
<tr>
<th>ENTERPRISE ARCHITECTURE - A FRAMEWORK™</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DATA</strong></td>
</tr>
<tr>
<td>SCOPE (CONTEXTUAL)</td>
</tr>
<tr>
<td>Planner</td>
</tr>
<tr>
<td>ENTERPRISE MODEL (CONCEPTUAL)</td>
</tr>
<tr>
<td>SYSTEM MODEL (LOGICAL)</td>
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<tr>
<td>Designer</td>
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<tr>
<td>TECHNOLOGY MODEL (PHYSICAL)</td>
</tr>
<tr>
<td>Builder</td>
</tr>
<tr>
<td>DETAILED REPRESENTATIONS (OUT-OF-CONTEXT)</td>
</tr>
<tr>
<td>Sub-Contractor</td>
</tr>
<tr>
<td>FUNCTIONING ENTERPRISE</td>
</tr>
</tbody>
</table>
Architecture of Integrated Information Systems

Organisational View

Data View

Control View

Function View

Product/Service View

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Method: Process Modelling Components

- Who?
- When?
- Which?
- Organisation
- Data / Service / Product
- Function

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Example: Event-driven Process Chains

Events trigger functions

Functions generate events

- Customer Order Received
- Confirmation of Customer Order
- Order Confirmation Created
- Trace Order
- Feedback Received
- Production Plan
- Production Plan Created

Example: Event-driven Process Chains
Example: Event-driven Process Chains

Data is processed in the functions

- Customer Data
- Confirmation of Customer Order
- Order Confirmation Created
- Production Data
- Trace Order
- Feedback Received
- Resources
- Production Plan
- Production Plan Created
Example: Event-driven Process Chains

Employees are responsible for functions

- Customer Order Received
- Confirmation of Customer Order
- Order Confirmation Created
- Production Plan Created
- Feedback Received

Murray (Employee) and Meyer (Employee) are responsible for different data and processes:

- Customer Data
- Production Data
- Trace Order
- Resources
- Production Plan

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View Integration
Water Corporation

Clean Water

Land Development Management

Manage Assets

Waste and Surplus Water

Billing

Customer Services

Finance

HR Management

Information Management

Support Services
Enterprise-Framework: Facility Management

Customer → Portfolio → Strategic Leadership → Reporting

Asset Management → Process Management → Controlling

CIO

Project study → Planning → Consulting → Ressource Management

Marketing → Sales

Technical Services → Commercial Services → Personal Services

IT → Material Management → Financial Accounting → Law

Human Resource Management

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Web-based Framework

Access to the underlying process models
Example: German Telecom

1. Strategy and Planning
   - Product and Innovation Management
   - Management of Customer Segments
   - Price Management
   - Enterprise Communication
   - Planning and Design Production Infrastructure
   - Working Production Infrastructure

2. Operational Management
   - Acquisition and Provision
   - Service

3. Human Resource Management
4. Reporting
5. Ressource Management

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German Telecom: Modelling Levels

Level 1
14 Core Processes

Level 2
TEMPO-Prozess Model

Level 3
3.1.1 Produktideen sind zu generieren
3.1.2 Produktideen sind gefunden
3.1.3 Produktideen sind dokumentiert
3.1.4 Produktideen sind wirtschaftlich grob eingeschätzt

CP 3: Produkt and Innovation Management

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Improving Processes

Initial process
Delete F2
Outsource F1
Switch F3 & F4
Expand F7
BPM Tools - Gartner Study 2002

Source
Gartner Research, June 2002
Tool Requirements

- Support for multiple view on an enterprise
- standard and integrated modelling techniques
- configurable
- intuitive
- repository
- Web Export, Web Design
- Reporting, Simulation, ABC, Balanced Scorecard, Knowledge Management
- Reference models
- Interfaces to workflow, CASE tools
- XML-based export/import
Reference Model

Reference model?
Content: Reference Models (here TOM)
ERP Reference Models

- purpose: benefits realisation
- facilitate the system upgrade
- basis for end-user training
- analyse the coverage of the Enterprise System

- use color coding
  - ES coverage
  - unused ES functionality
  - add-on solution

© Michael Rosemann, QUT Brisbane – Leonardo Breakfast Seminar, 26 October 2001
Why Process Modelling (As-is)?

+ standardize process documentation
+ same problem understanding
+ knowledge transfer
+ stress shortcomings of current situations
+ supports acceptance for the project (unfreezing)
+ completeness of to-be-processes can be evaluated
+ supports certification and audits
+ shows potential/limits of reengineering

- Danger of thinking in constraints
Process Improvement
Three Perspectives on a Process

Resource Perspective

Collect

Examine

Archive

Process / Function Perspective

Object Perspective

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Automating Processes
Positioning Workflow Management

I. Process Optimisation
- Business Process Engineering
- Reference Models
- Continuous Process Improvement

II. Process Management
- Modelling
- Analysis
- Navigation
- Simulation
- Quality Assurance
- Executive Information Systems
- Controlling
- Monitoring
- Capacity and Time Control

III. Workflow
- Call Function
- Document Flow
- Call Data

IV. Processing
- Object Library
- Enterprise System
- Internet Applets
- Function Modules
- Database

© Scheer
Procedure Model

Define Project Objectives

Identify Modellers

Identify Customers

Consolidate Requirements

Select Modelling Technique

Select Modelling Tool

Define Modelling Conventions

Configure Modelling Tool

Process Modelling
BPM Maturity Level 1

- individual efforts
- various and not consolidated approaches re methodology, tools, techniques
- single purpose
- simple tool
- paper intensive
- minimal user involvement
- reduced external support (if at all)
BPM Maturity Level 2

- importance of process modelling is recognised
- elaborated use of Visio or single license of BPM tool
- one main modelling purpose
- first attempts re methodology, standards
- increased user participation
- external support required
BPM Maturity Level 3

- Centre of Excellence establishes standards re methodology, tool usage, techniques, quality assurance
- sophisticated tool (server-based, multiple and distributed users)
- merge of different modelling initiatives
- process models on the web substitute existing documentation
- comprehensive user training sessions
- external support for new application areas
BPM Maturity Level 4

• Business Process Modelling is a natural part of managers’ activities
• established business process lifecycle management
• widely accepted methodologies, tool, techniques
• Various and integrated modelling purposes
• mandatory project component
• small centre of excellence
• continuous extension and consolidation of purposes
• minimal external support
Business Process Modelling Maturity

Institutionalisation of BPM

Centre of Excellence

Modelling Maturity

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The Future: Three-dimensional Process Models

Jerrentrup (2000)
The Future: Runtime -> Buildtime
Final Recommendations

• recognise that processes are the infrastructure for all your initiatives
• process management has to be integrated
• process modelling enables process reengineering, but this is not an automatism
• avoid process modelling as ‘L’Art pour L’Art’
• process management and process modelling are not rocket science
Business Process Modelling

Michael Rosemann

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