Introduction

Business practice

'Process' is the magic word:
- Tight linking of business functions (e.g. for on-demand business)
- Required end-to-end (order to delivery) business optimization
- Within individual organizations, but increasingly across organizations
- From function-oriented business to process-oriented business
- Complexity requires automated support
Business Process Modeling

GTI process:
- select accomm.
- select transport
- calculate costs
- cancel accomm.
- cancel transport
- book trip
- send acknowledgment
- prepare documents
- send documents
- prepare invoice
- send invoice
- check payment
- send reminder

Process specification techniques:
- data flow based?
- token based?
- event based?
- document based?
- communication based?
GTI process in DFD

1. sell trip
2. book trip
3. handle invoice
4. handle docum.
5. process payment

GTI process in Petri Net

1. select accomm.
2. calc. costs
3. book trip
4. cancel acc.
5. cancel transport
6. send ackn.
7. prepare docs.
8. send invoice
9. send docs.
10. send reminder.

GTI process (UML activity diagram)

GTI process in document transformation chart

The perfect choice

- Choice depends on
  - nature of workflow
  - level of detail
  - intended audience
- Combination of techniques for
  - different abstraction levels
  - different aspects
- Consistency with BPMS environment
  - ‘independent’ modeling tools
  - BPMS-specific tools and details
Thinking of Mintzberg

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<th>UML AD</th>
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Business Process Modeling

working with specific tools

GTI process in WFPD

WF process specification language

OR-JOIN StartJoin,
SEQUENCE SelectAccommodation,
SEQUENCE SelectTransport,
CalculateCosts,
SEQUENCE CalculateCosts,
BookSplit;
OR-SPLIT BookSplit
CASE CustomerDecision
change : StartJoin,
cancel : CancelAccommodation,
book : BookTrip;
**WF activity specification language**

**ACTIVITY** SendAcknowledgment

**DESCRIPTION**
"Preparation of booking acknowledgment letter for customer in MS-Word, printing and sending it."

**INPUT** = TripBookForm

**OUTPUT** = TripBookAckLetter

**APPLICATION** = MS-Word

**ROLE** = General

**AVGTIME** = 5

**MAXTIME** = 15
Workflow concept model

Workflow process concepts

Workflow organization concepts

Workflow information concepts

Workflow concepts (summarized)

Specification vs instantiation
Advanced business process aspects

- Transactional processes
- Exceptions in processes
- Explicit data flow in processes
- Cross-organizational processes
Cross-organizational processes

START
- select accommodation
- select transport
- calculate costs
- cancel accommodation
- cancel transport

STOP
- book trip
- send acknowledgment
- prepare documents
- send documents
- send remainder
- check payment
- prepare invoice
- send invoice
- send reminder
- calculate costs

WFM Concepts (XO)

START
- agent
- process model
- use
- info model
- agent
- use
- info model
- agent
- process model
- use
- info model
- agent
- info model
- use
- info model
- agent
- process model
- info model

WFMS as Infrastructure

BPM - #43 - PG'06
SIKS – O&I

Cross-organizational processes

Business Process Management

WFMS as Infrastructure

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WFM Concepts (XO)

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Business Process Management

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Business Process Management

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Business Process Management

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Business Process Management

BPM Systems
### BPMWFMS Architecture

- Process Definition Tools
- Workflow Engine(s)
- Administration & Mgmt Tools
- Workflow Client Applications
- Invoked Applications
- Other WF Enactment Service(s)

### Mercurius WFMS Architecture

- UIS
- DBMS
- CS
- AS/OS

### Business Process Management

- Looking at the control cycle

### Blumenthal's Model

- Environment
- Control System
  - Strategic
  - Tactical
  - Operational
- Information System
  - Data
- Transformation System
Conclusions

Business process modeling

- Many approaches to process modeling
- Practice often based on (informal) petri net variants – but quite some confusion
- Integration required of organization, information, and process model
- Multi-level and/or multi-aspect modeling required for complex applications
- Advanced aspects required for complex applications (but adopted by practice?)

Business process enactment

- Workflow management integrates aspects of classical control cycle
- Workflow management not yet as generally accepted as database management
- Standardization lags behind
- Choice between structured (WFMS), semi-structured (CHS) and unstructured (GW)
- Heavily influenced by emerging Web standards (e.g. BPEL)