TECHNISCHE UNIVERSITÄT WIEN

VIENNA UNIVERSITY OF TECHNOLOGY

Business Process Management and Tool Support: ADONIS®

Modeling, Optimization, Execution and Monitoring of Business Processes

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TU Vienna

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BOC Information Systems GmbH

www.boc-eu.com

Overview

- Part I: Introduction
  - Company Profile
  - BPMS: Business Process Management Systems
- Part II: Business Process Modeling
  - Basics
  - Example from IT Service Management Area
- Part III: Business Process Optimization
  - Structural and dynamic
  - Example from Health Care Area
- Part IV: Business Process Execution
  - From Business Process Modeling to Process Execution
  - Example from Insurance Area
- Part V: Business Process Monitoring
  - Business Monitoring Framework
  - Example from Direct Sales Area
- Part VI: Summary & Outlook

Part I

Introduction

BOC Company Profile and Business Fields

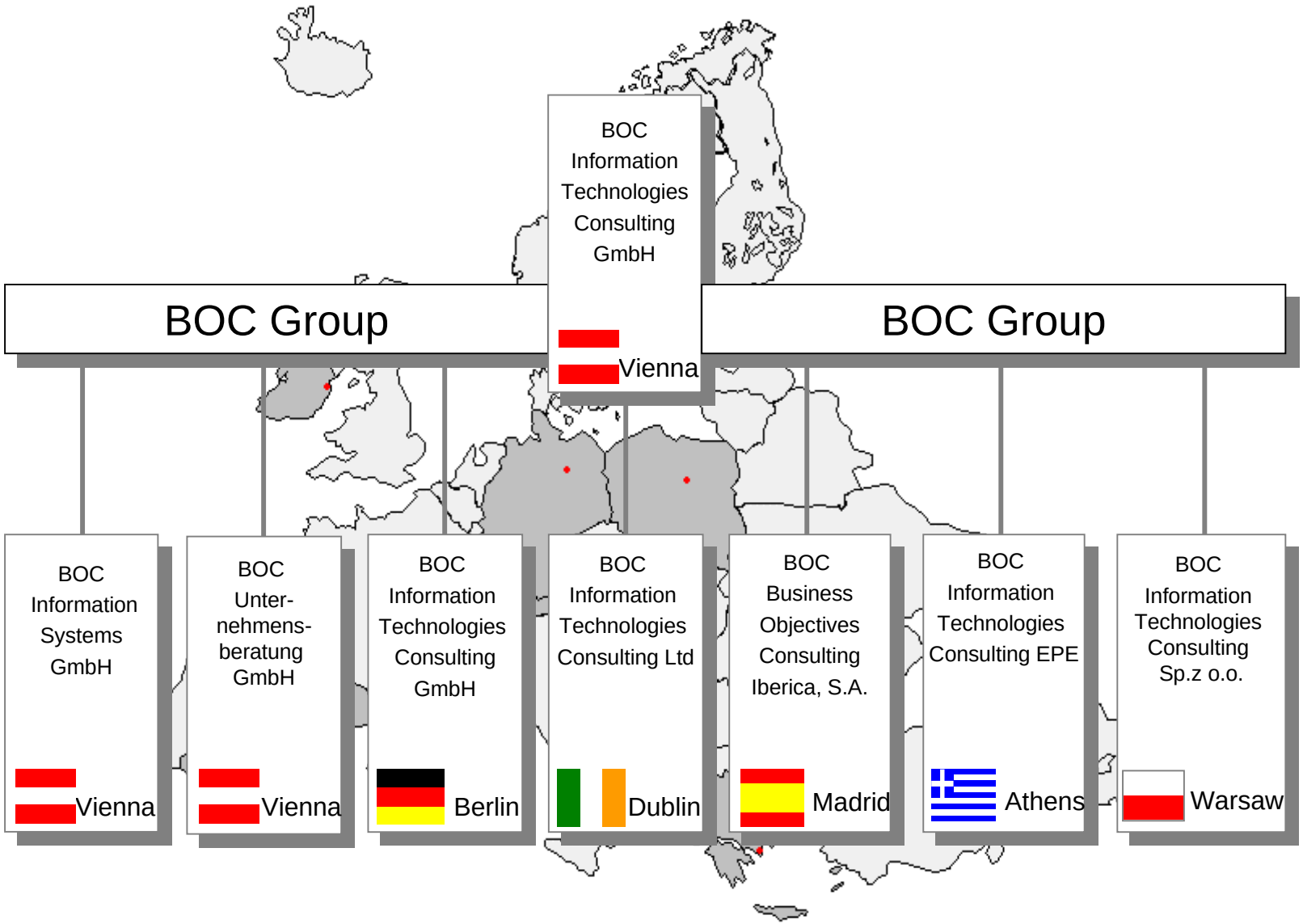
- Founded 1995, as a spin of from the BPMS group at the University of Vienna
- A mix of developers and consultants (Business and IT people)
- With currently 120 employees

Business fields:

- **Software Development**
  - Development of ADONIS®, ADO*score*®, ADO*it*®, ADO*log*®, PRO*fit*® etc.
  - Development of integration modules (interfaces to Workflow Management Systems, ERP systems, Groupware, web-based systems etc.)

- **Services and Consulting**
  - Consulting and implementation of organizational change projects.
  - Consulting and projects in the area of Strategy Management, Business Process Management and IT Management.
  - Consulting and projects in the area of process based application development.
  - Customizing of BOC products to customer specific needs.
  - Training in methods and tools (end user, train-the-trainer etc.).
  - Technical support.

Company Profile: The BOC Group

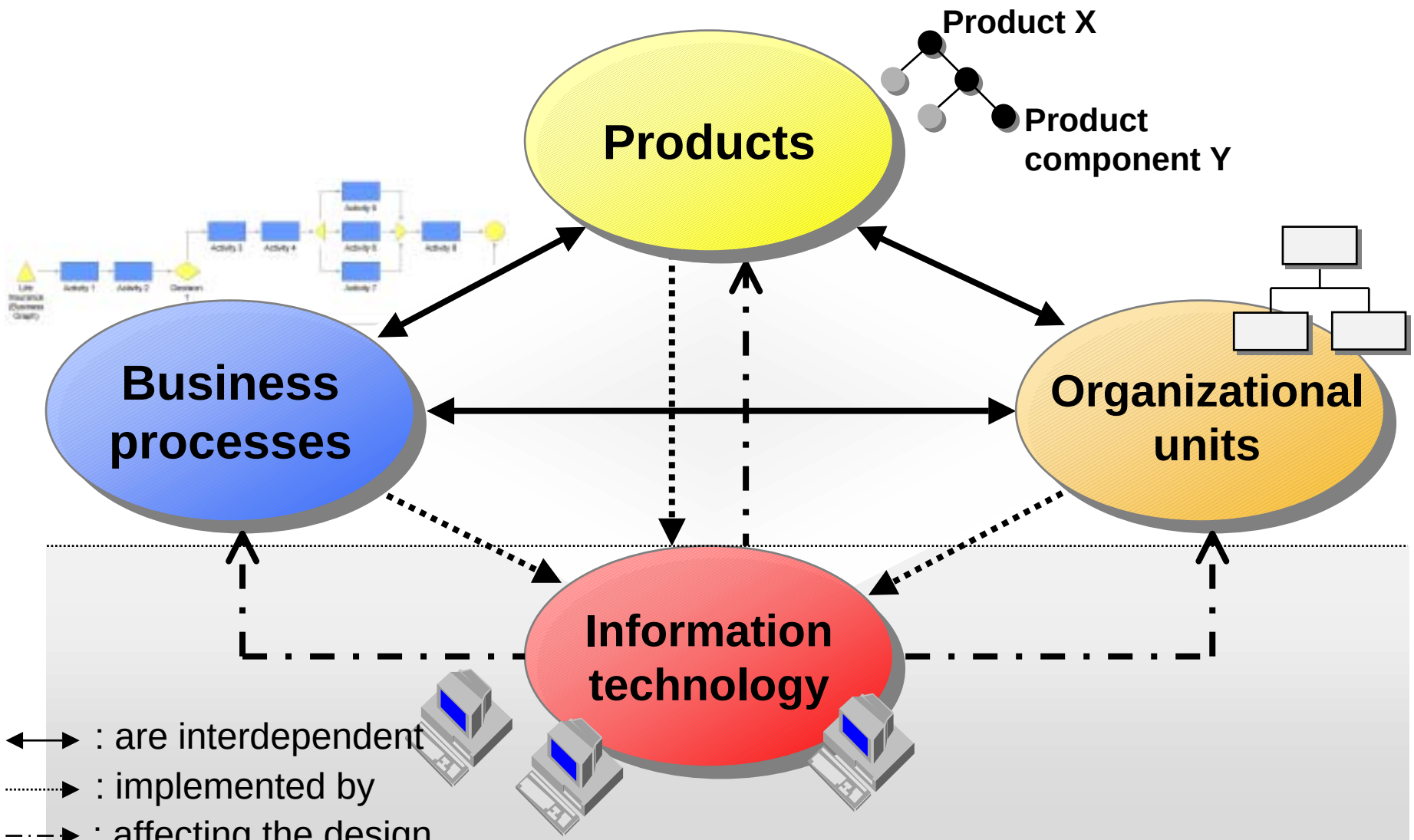


Product Portfolio: IT-based Management Solutions

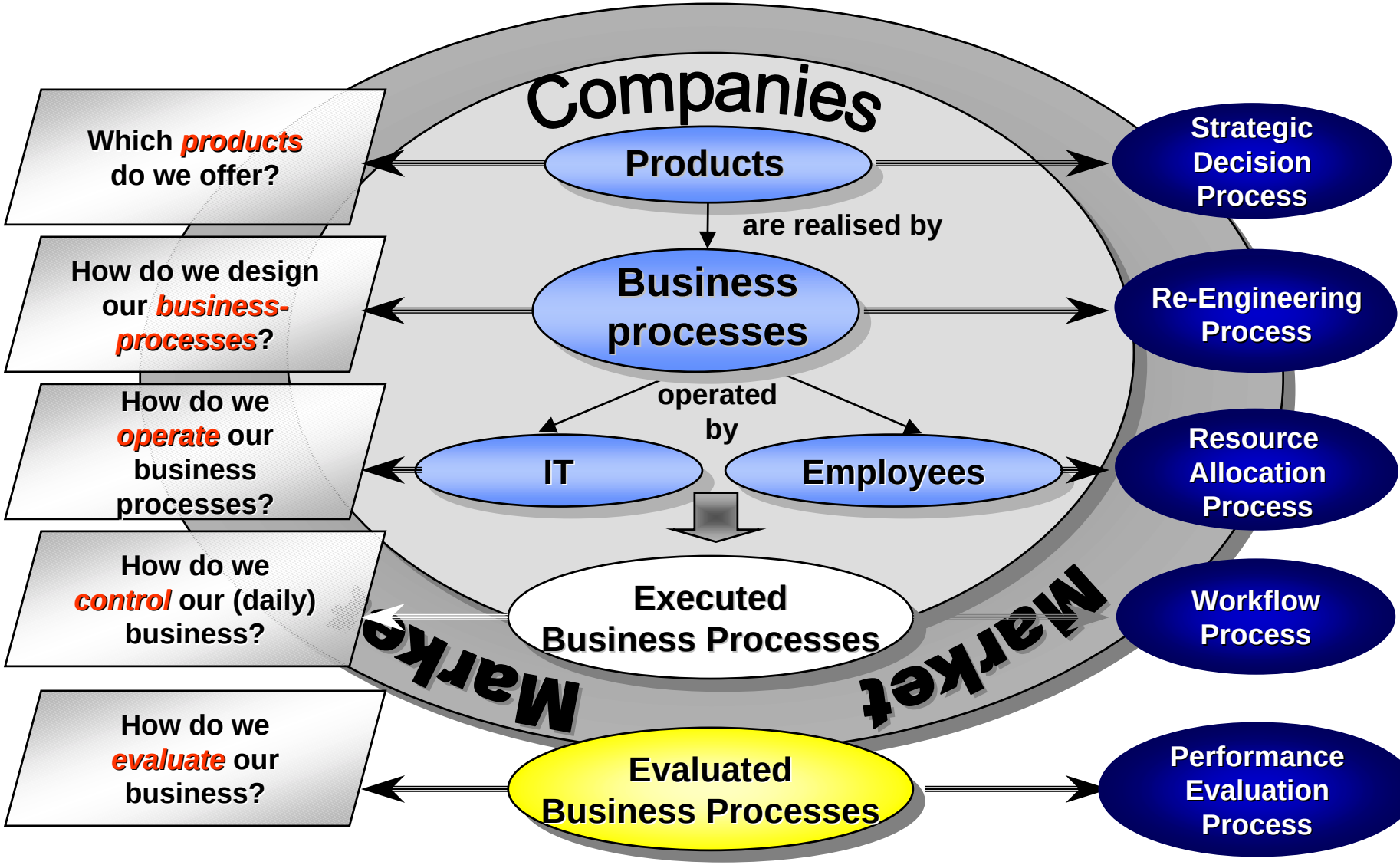
"Software Products for IT Support for Central Management Approaches"

Strategy Management	*Process Management*		*IT Management*
BSC Method	**BPMS Method**	**SCOR Method**	**ITIL® Method**
			
Strategy and Performance Management	**Business Process Management**	**Supply Chain Management**	**IT Service and Architecture Management**

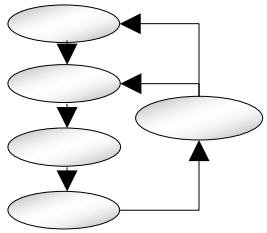
BPM: Core Elements of (Service) Organizations

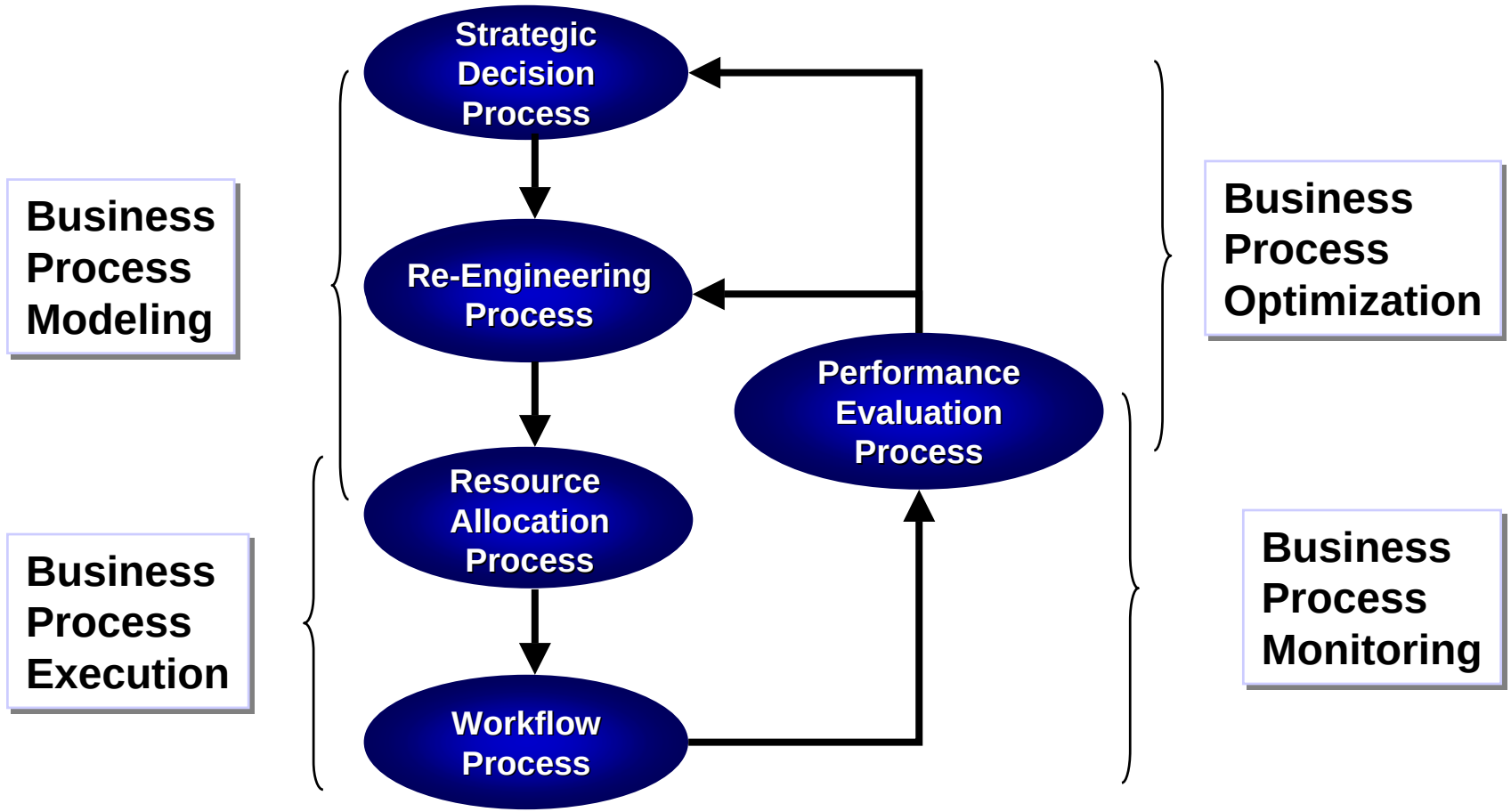


The BPMS Paradigm

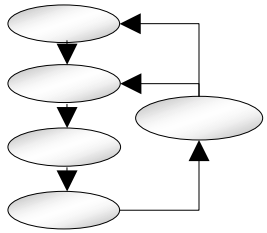


The BPMS Subprocesses





BPMS and Tool Support



- Management IS
- Executive IS
- . . .

Strategic Decision Process

Business Process Management Tools, e.g. ADONIS®

Re-Engineering Process

Performance Evaluation Process

Resource Allocation Process

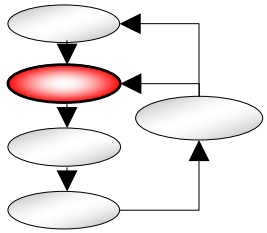
- Groupware Tools
- Workflow Tools
- CASE Tools
- ERP SW
- Web Tools
- . . .

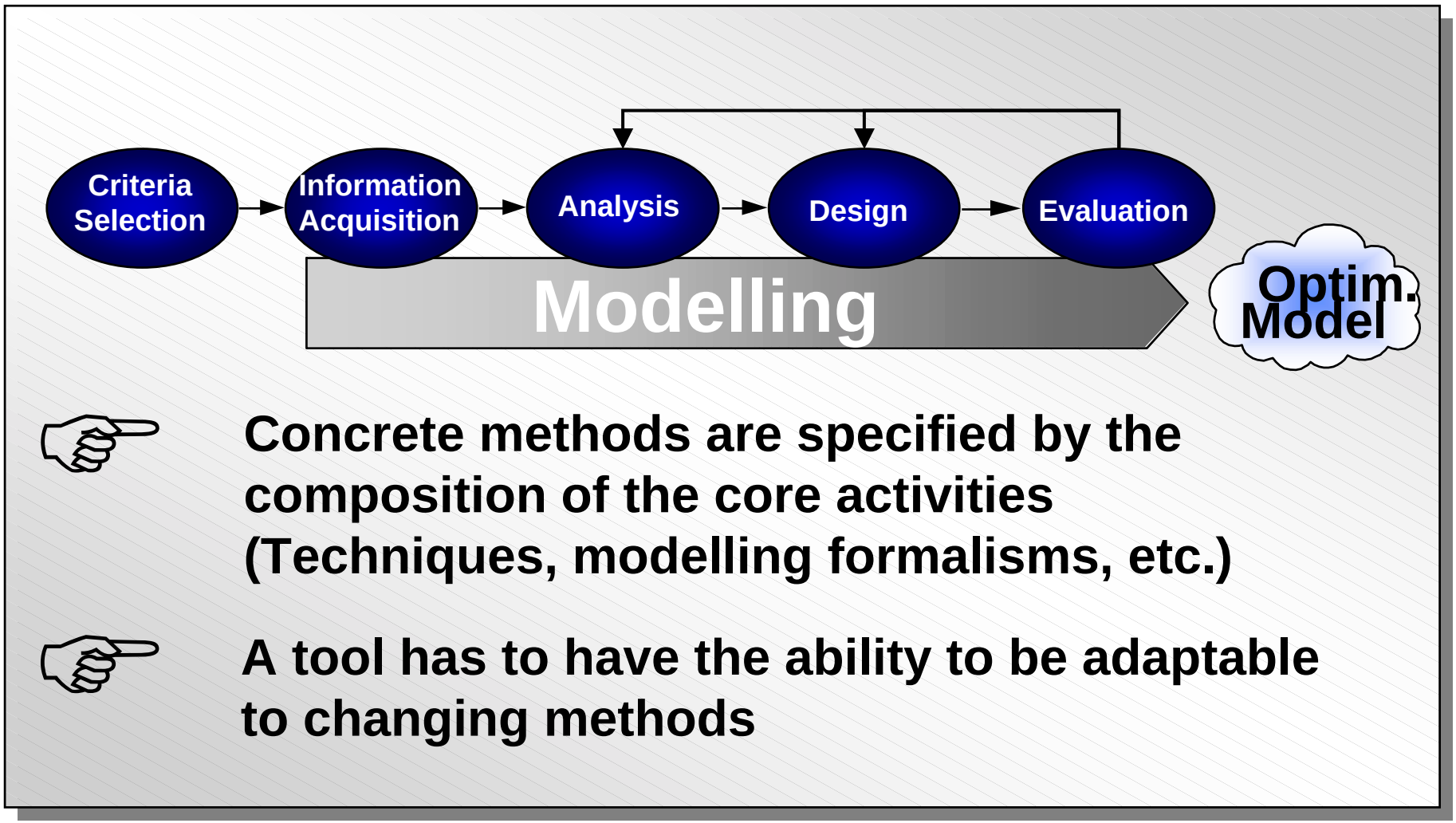
Workflow Process

Methods

Core Activities in the Re-Engineering Process

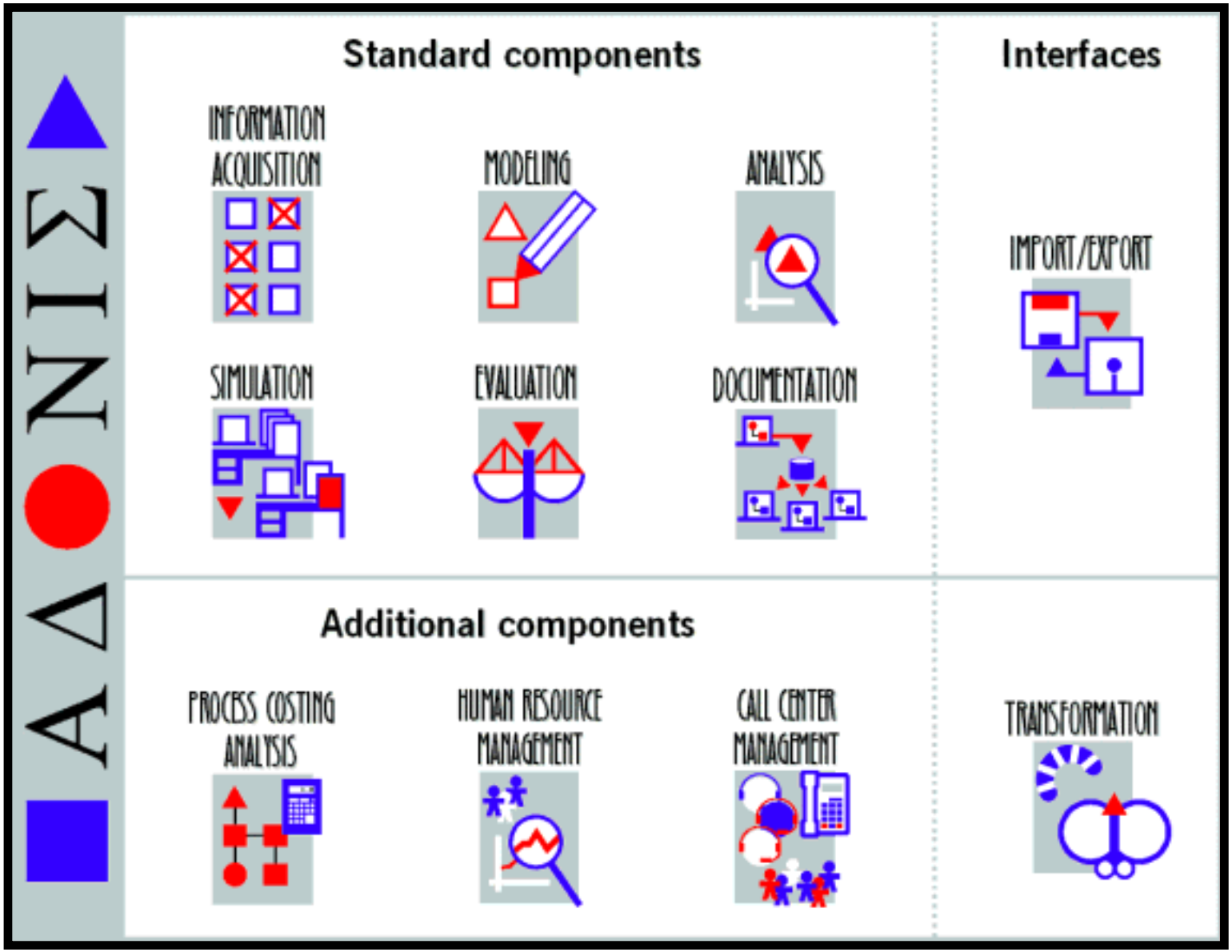
Motivation of ADONIS components



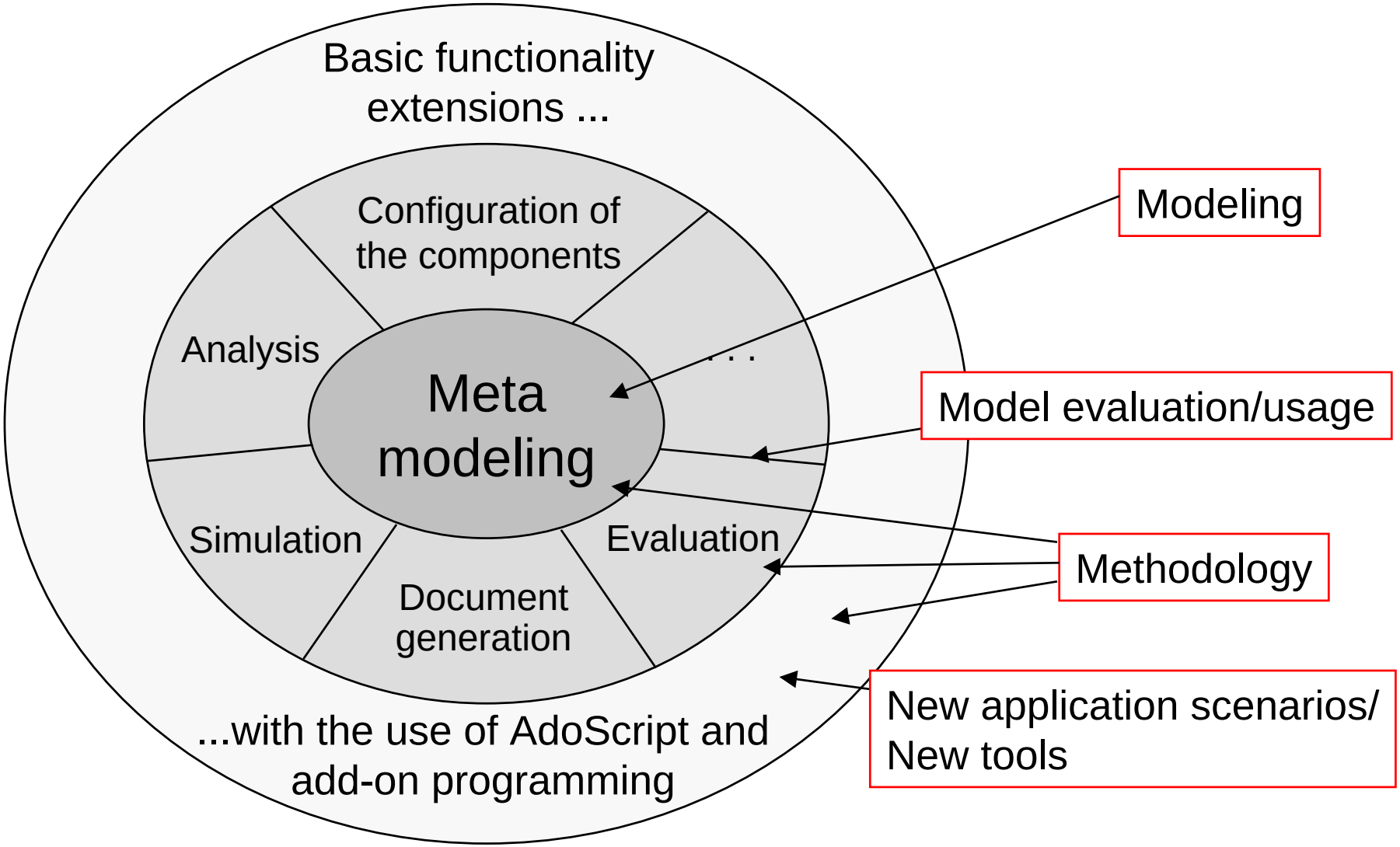


- Concrete methods are specified by the composition of the core activities (Techniques, modelling formalisms, etc.)
- A tool has to have the ability to be adaptable to changing methods

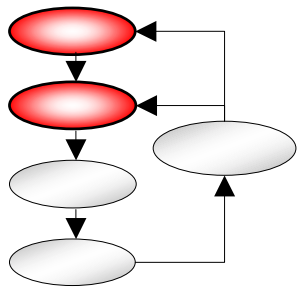
ADONIS: Overview of Components



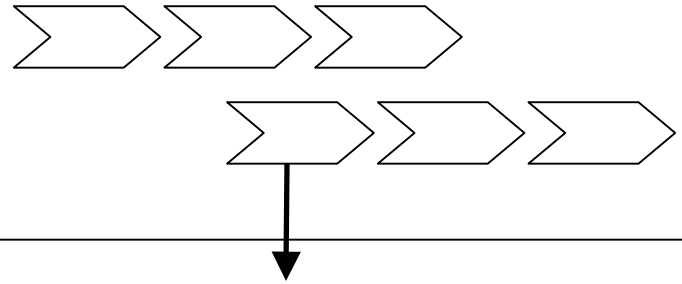
Method Development in ADONIS: Levels



Part II
Business Process Modeling

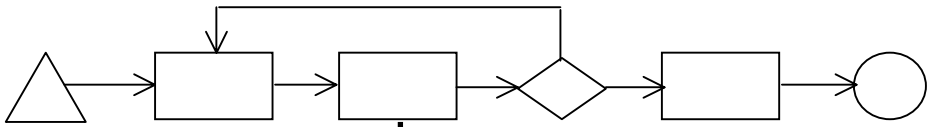


Abstraction Levels in Process Modeling/Mapping



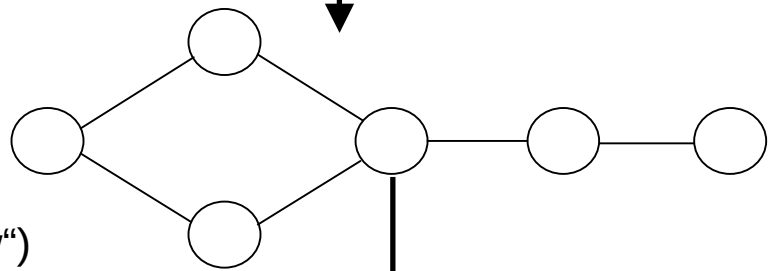
Process Map

Addressees:
Chief Executive,
Management etc.



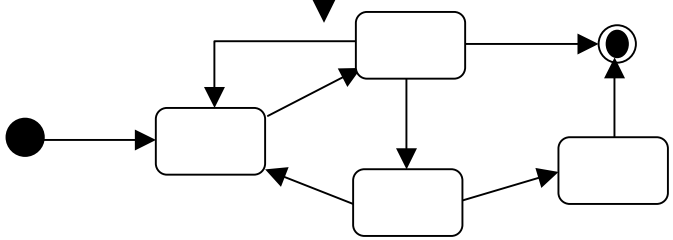
Business Process

Addressees:
Process Responsible, Process Manager, Business Process Expert etc.



Workflow
(„Macro Flow“)

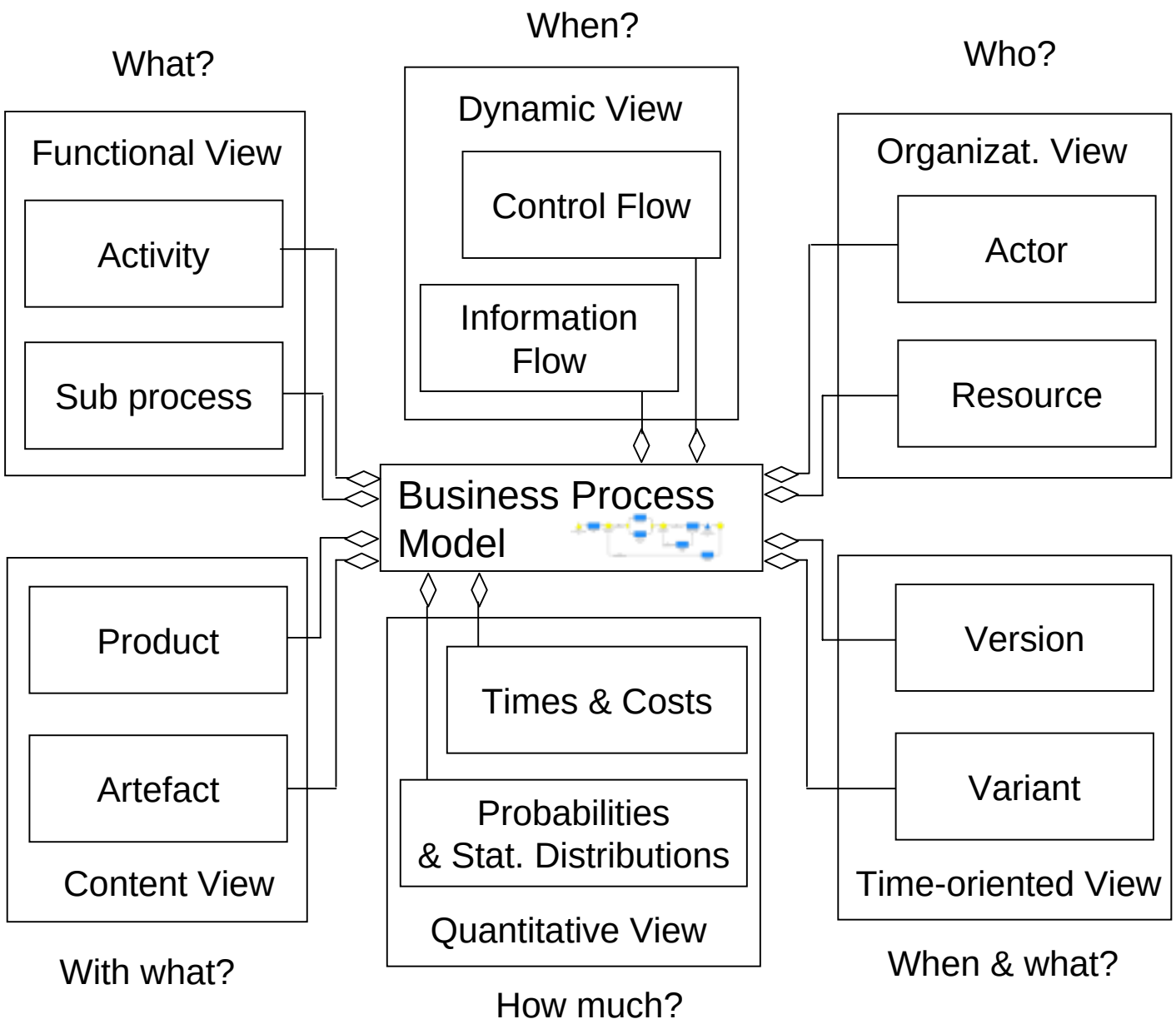
Addressees:
IT Specialist, System Architect, Application Developer etc.



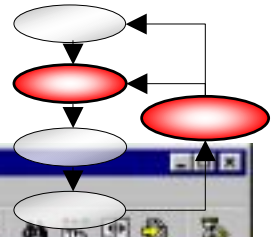
Micro Flow

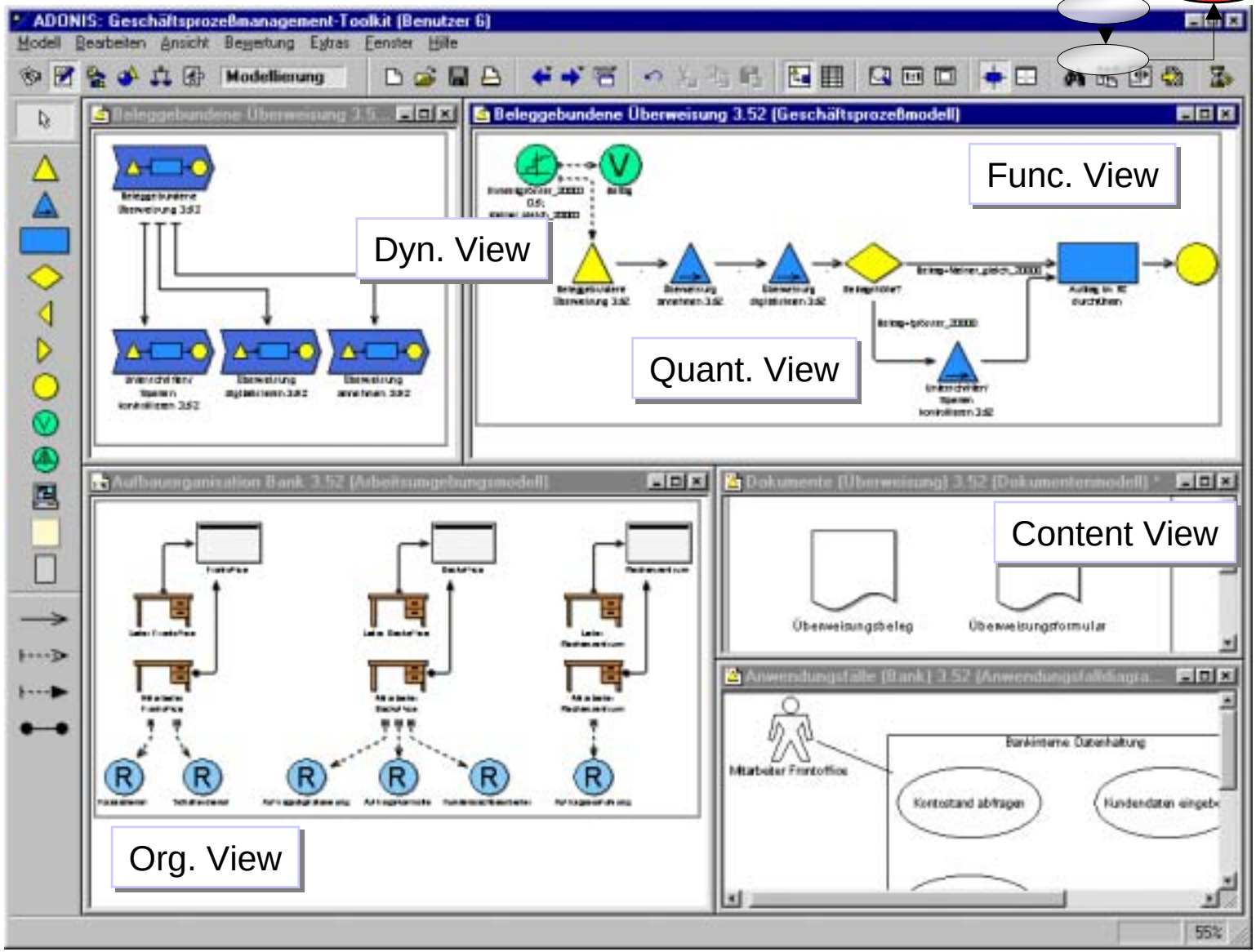
Addressees:
Application Developer, Programmer etc.

Views on Business Processes - Interdependencies

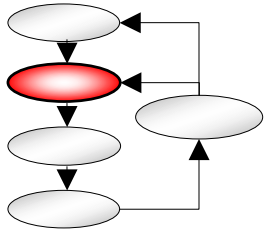


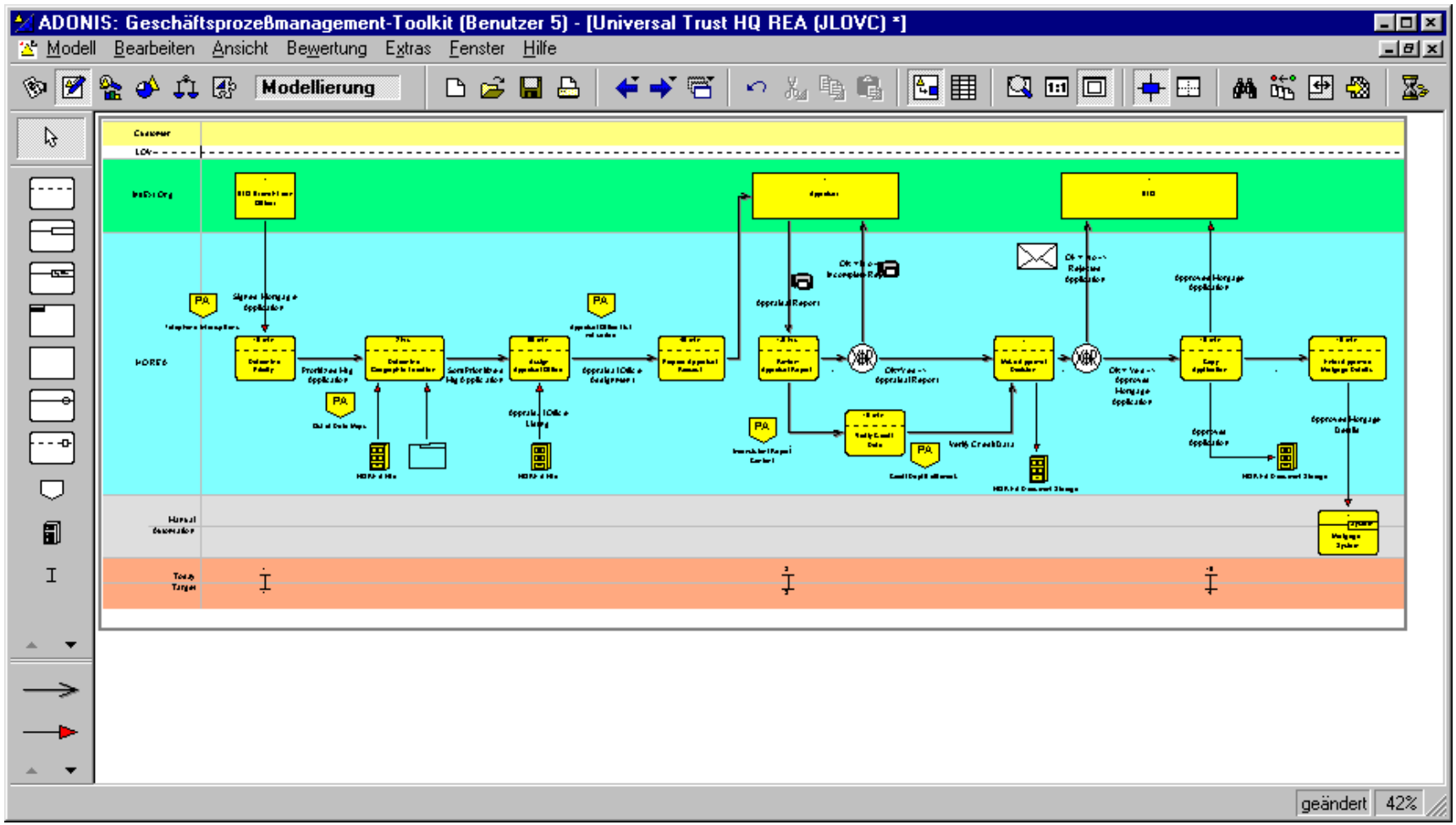
BPMS Method



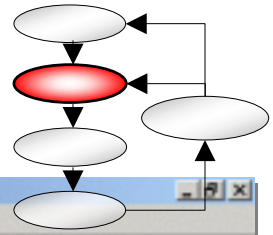


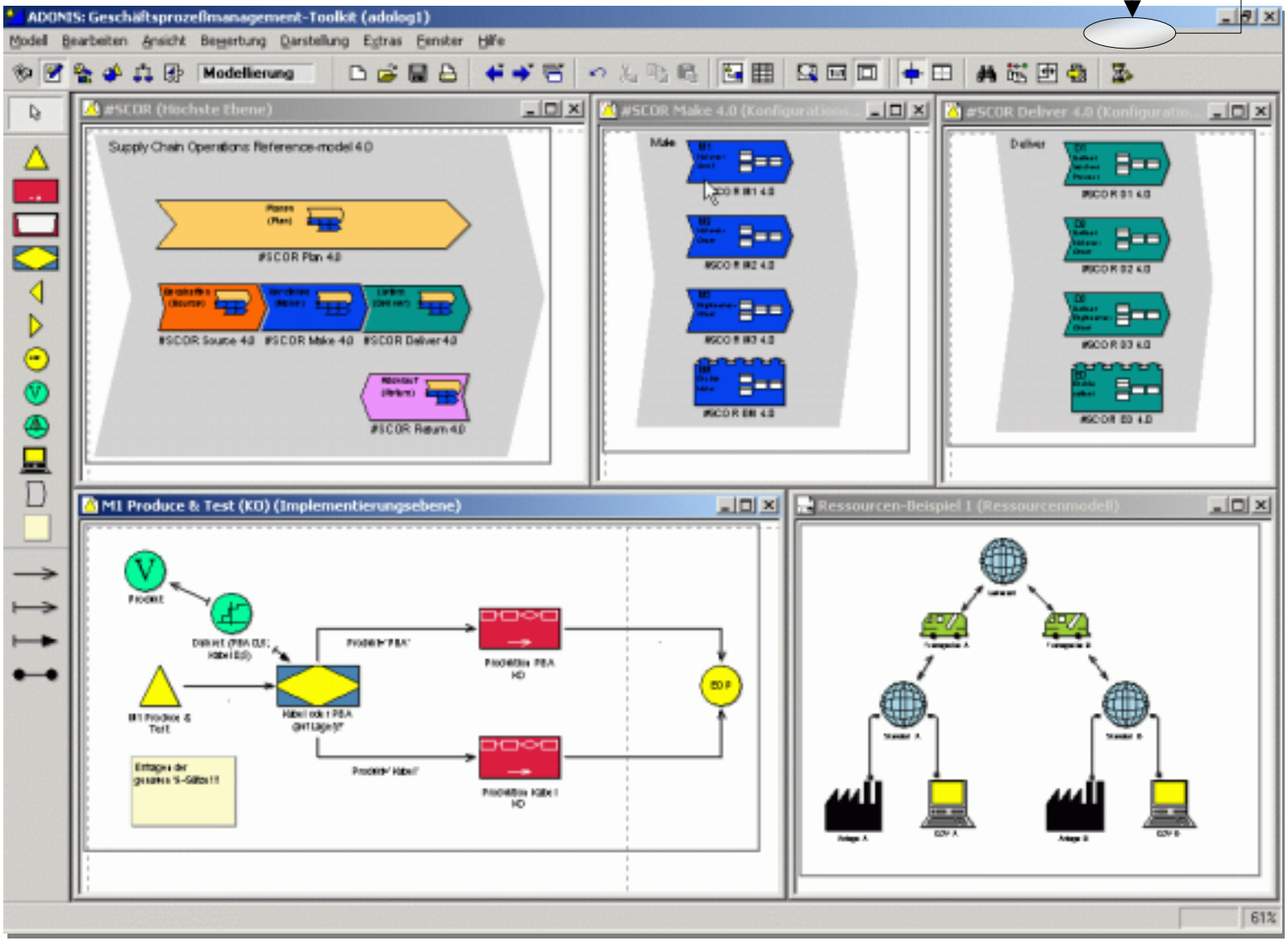
LOVEM Method



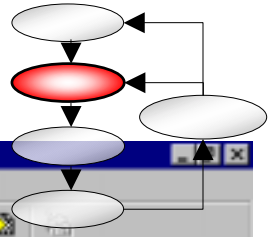


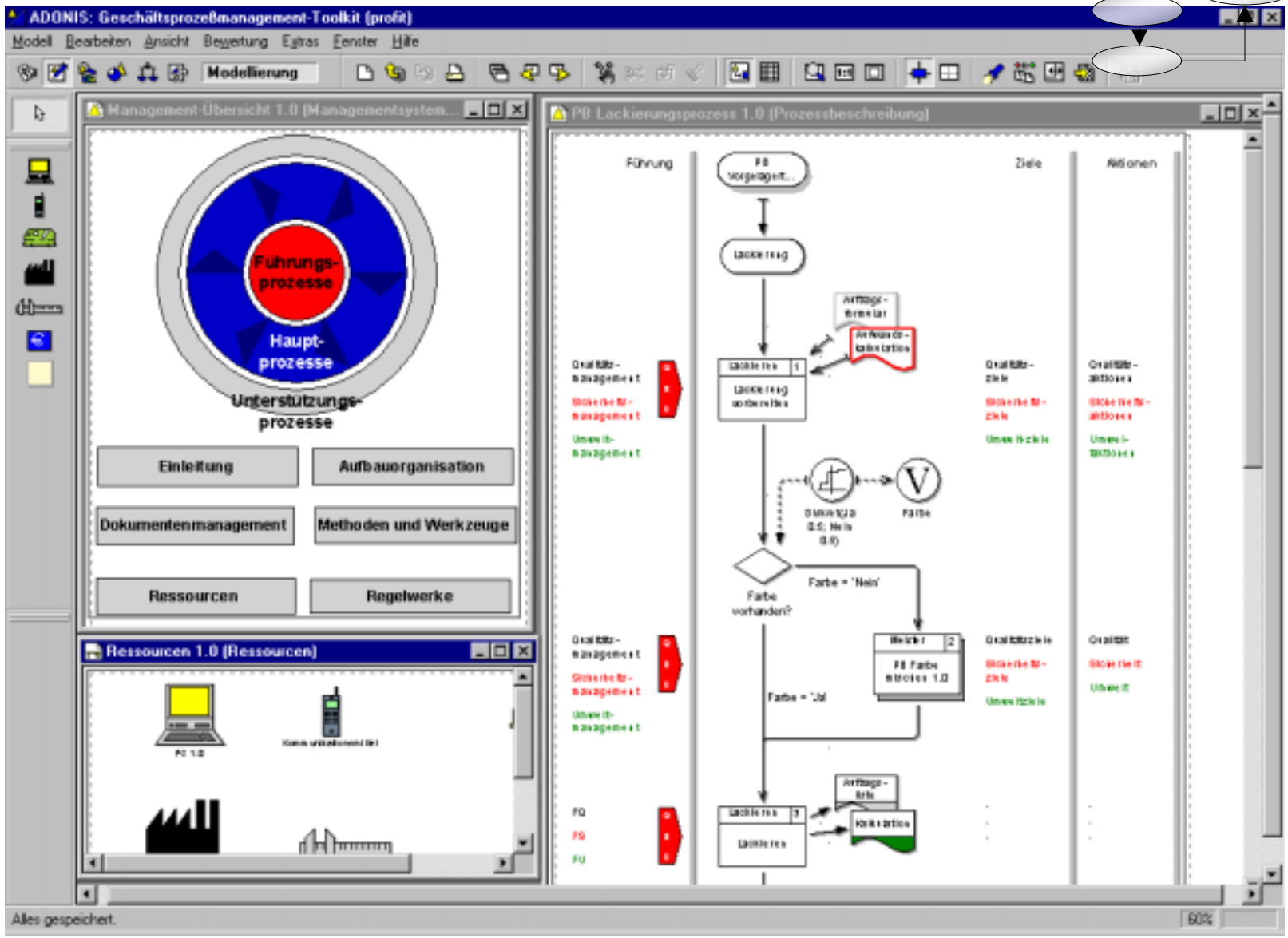
SCOR Method



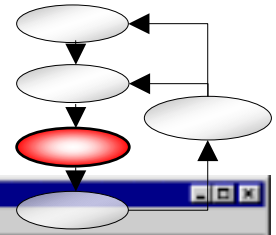

ADONIS: Geschäftsprozeßmanagement-Toolkit (adologi)
Modell Bearbeiten Ansicht Bewertung Darstellung Extras Fenster Hilfe
Modellierung
#SCOR (Höchste Ebene)
Supply Chain Operations Reference-model 4.0
#SCOR Plan 4.0
#SCOR Source 4.0
#SCOR Make 4.0
#SCOR Deliver 4.0
#SCOR Return 4.0
#SCOR Make 4.0 (Konfiguration...
Make
#SCOR Deliver 4.0 (Konfiguratio...
Deliver
MI Produce & Test (KO) (Implementierungsebene)
Ressourcen-Beispiel 1 (Ressourcenmodell)
61%

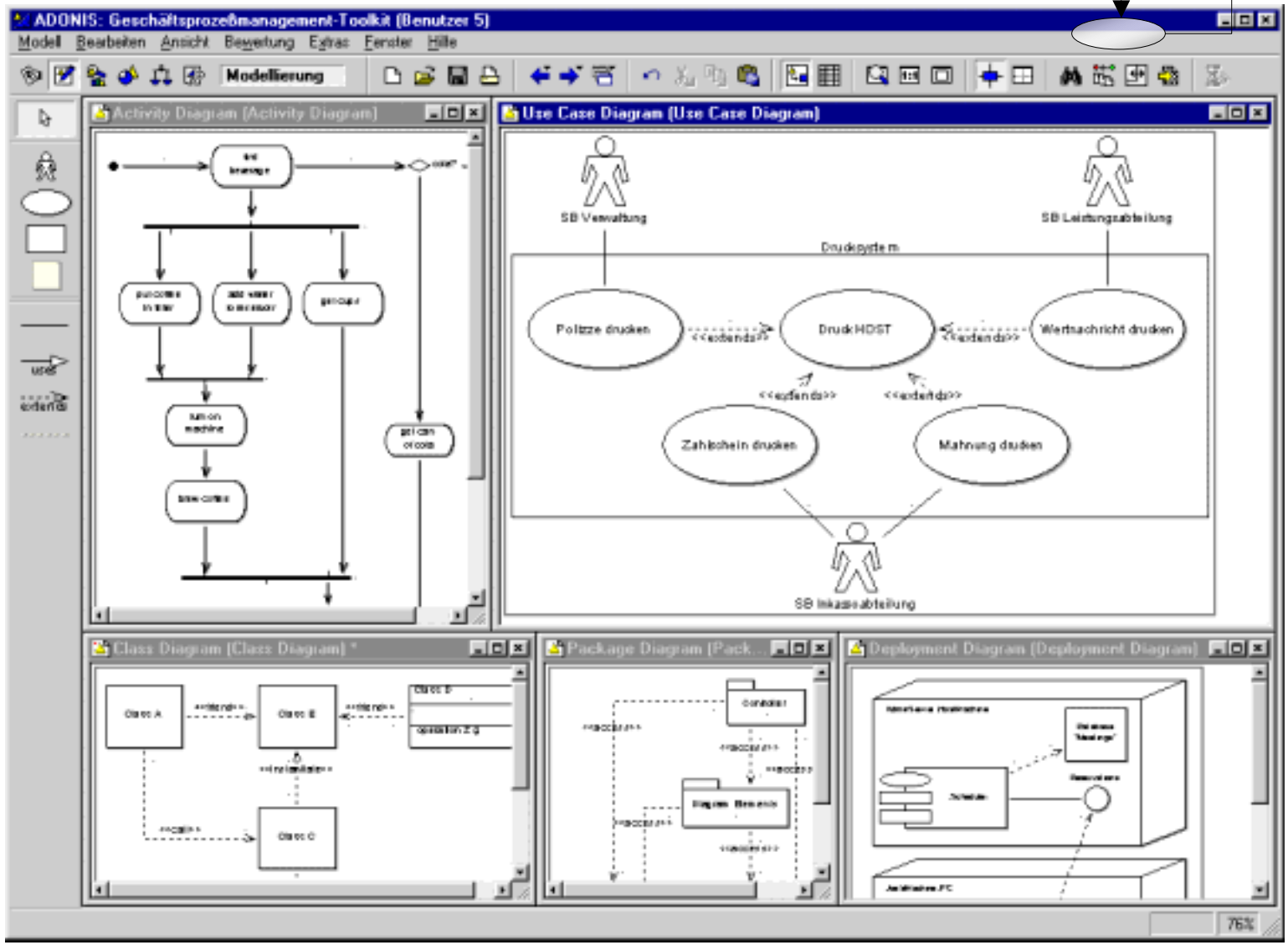
ISO 9000:2000 Method



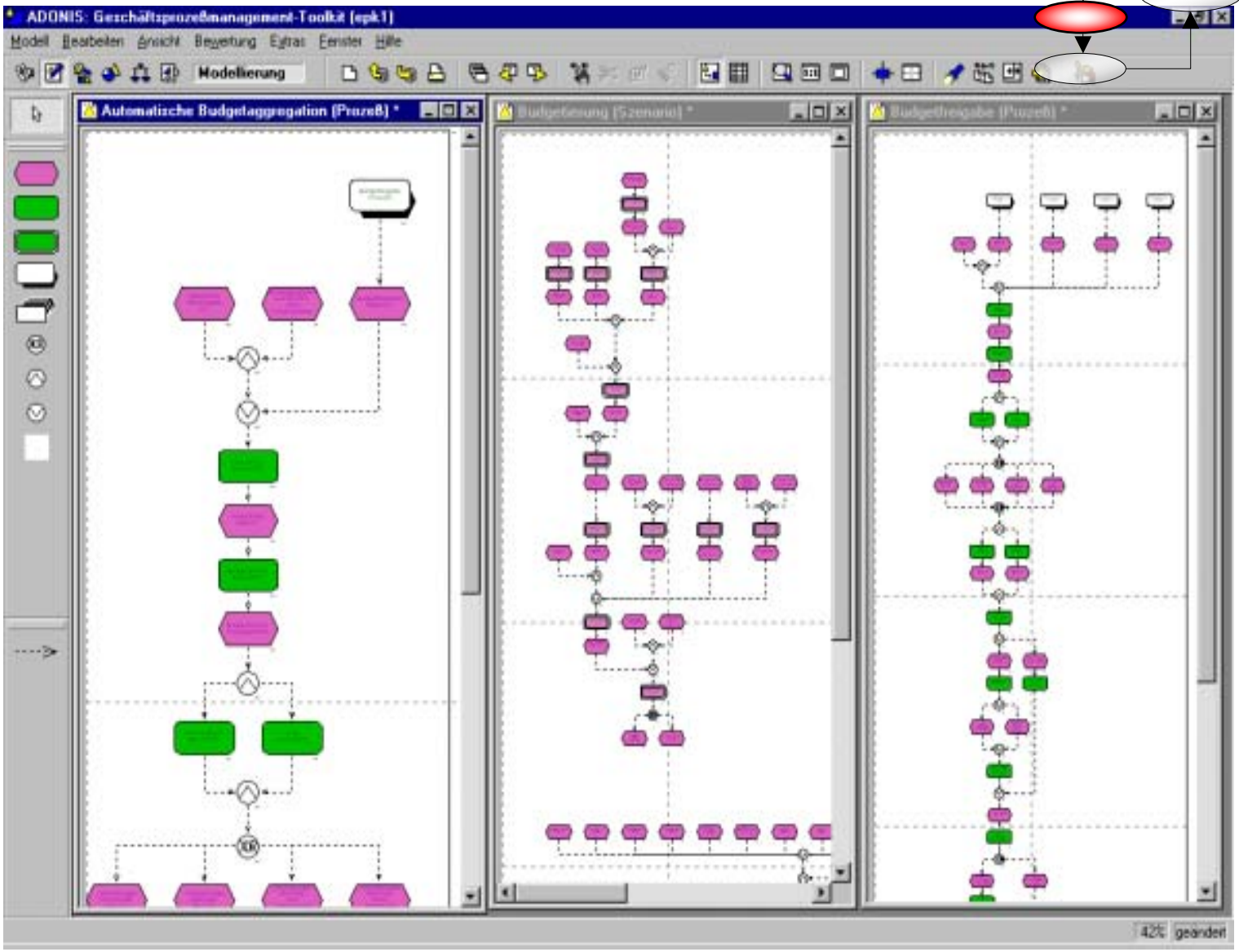


UML Method



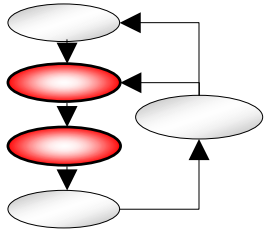


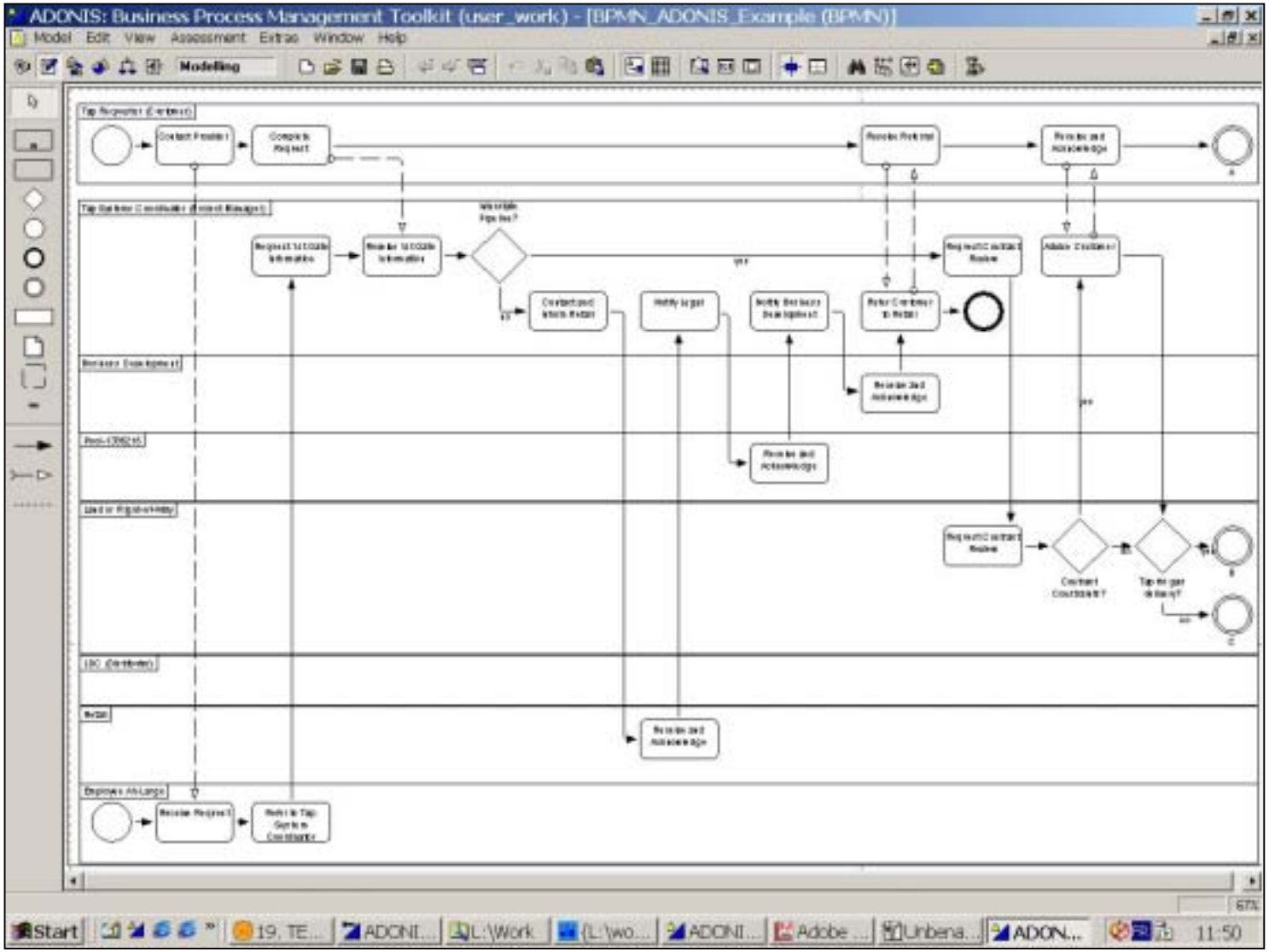
EPC Method



BPMN Method

BPMI.org

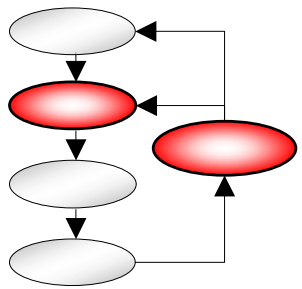




Example – IT Service Management

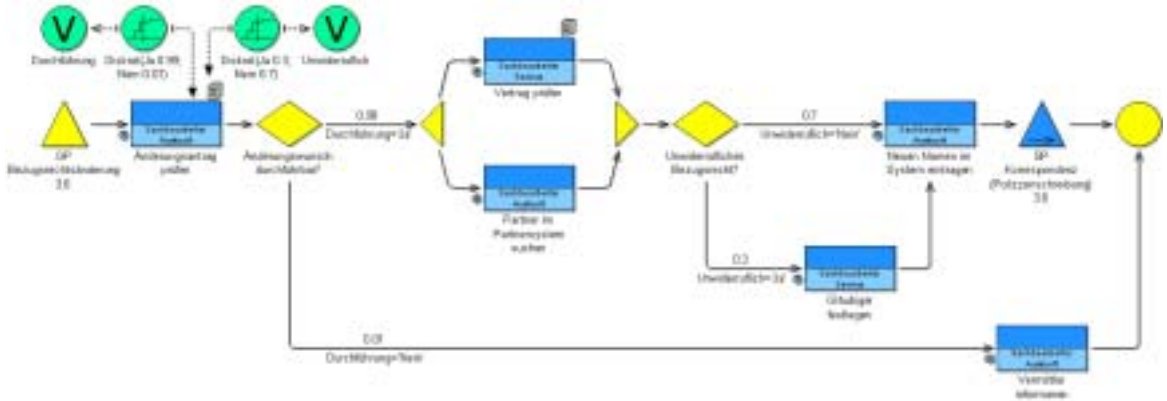
Live Example “ITIL Processes”

Part III
Business Process Optimization



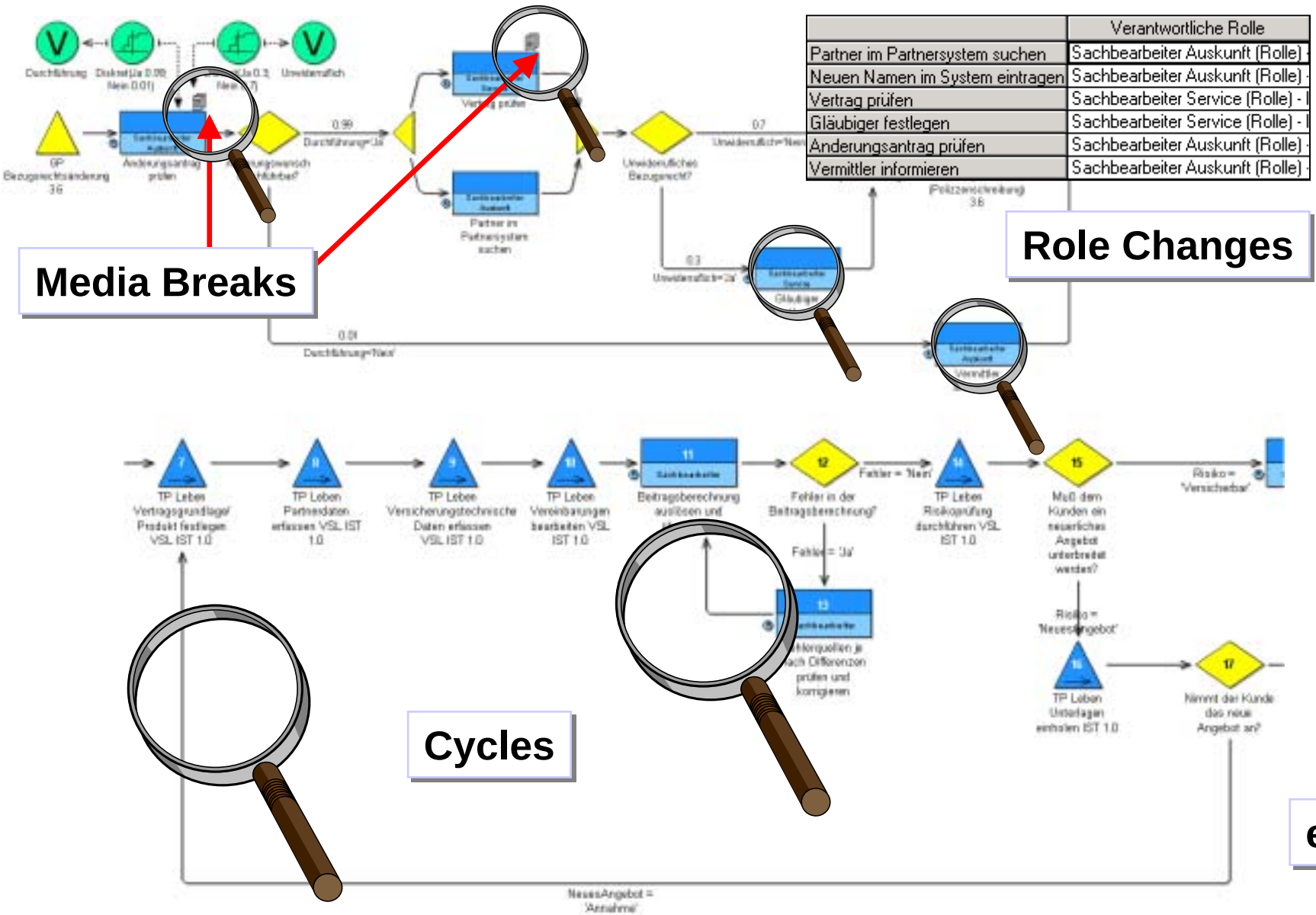
Approaches of Business Process Optimization

Structural Optimization: Modeling, Checks, Navigation, Documentation, Queries etc.



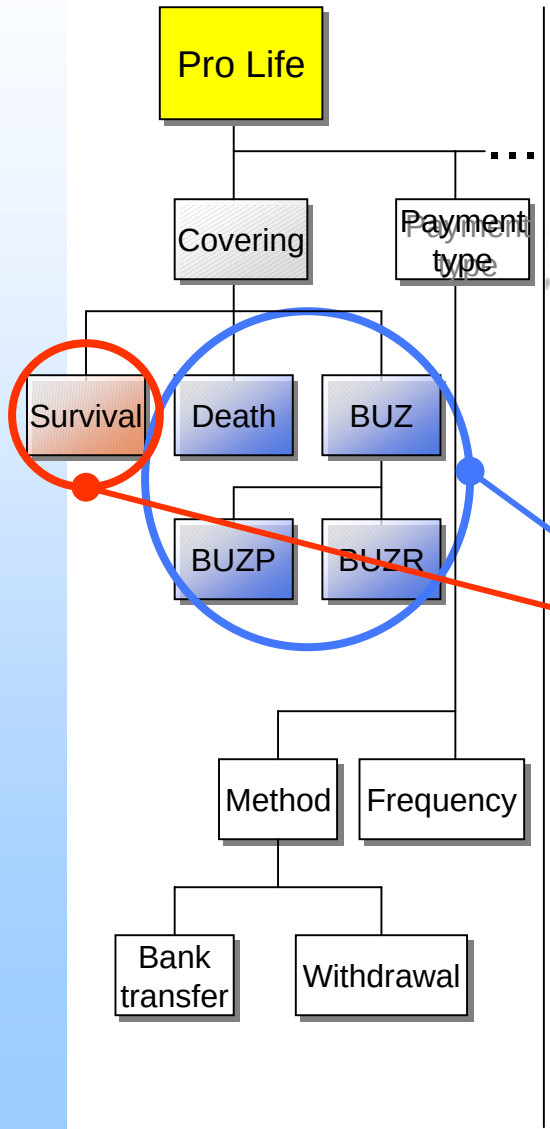
Dynamic Optimization: Path Analysis, Capacity Analysis, Workload Analysis, Scenario Management etc.

Structural Optimization

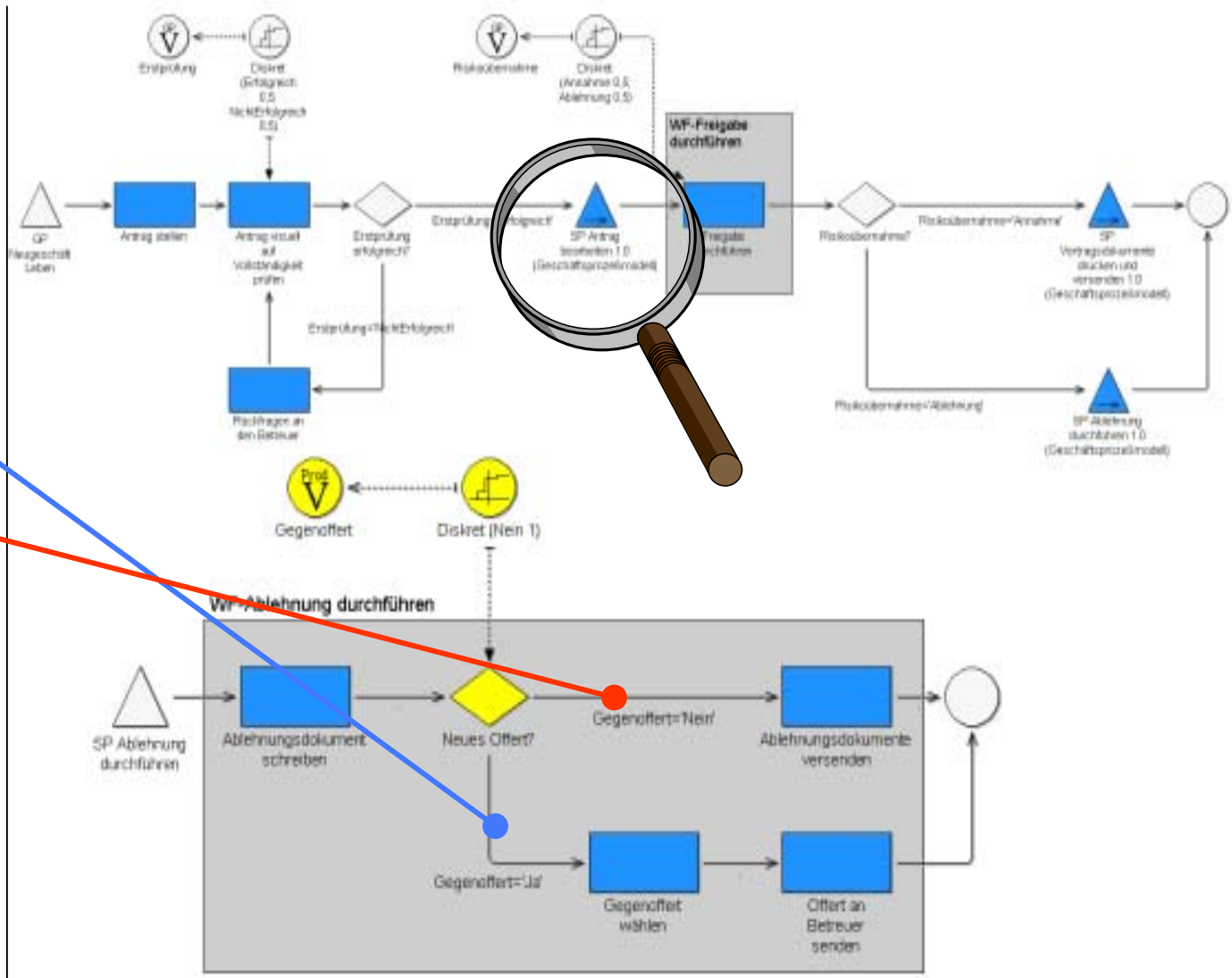


Structural Optimization

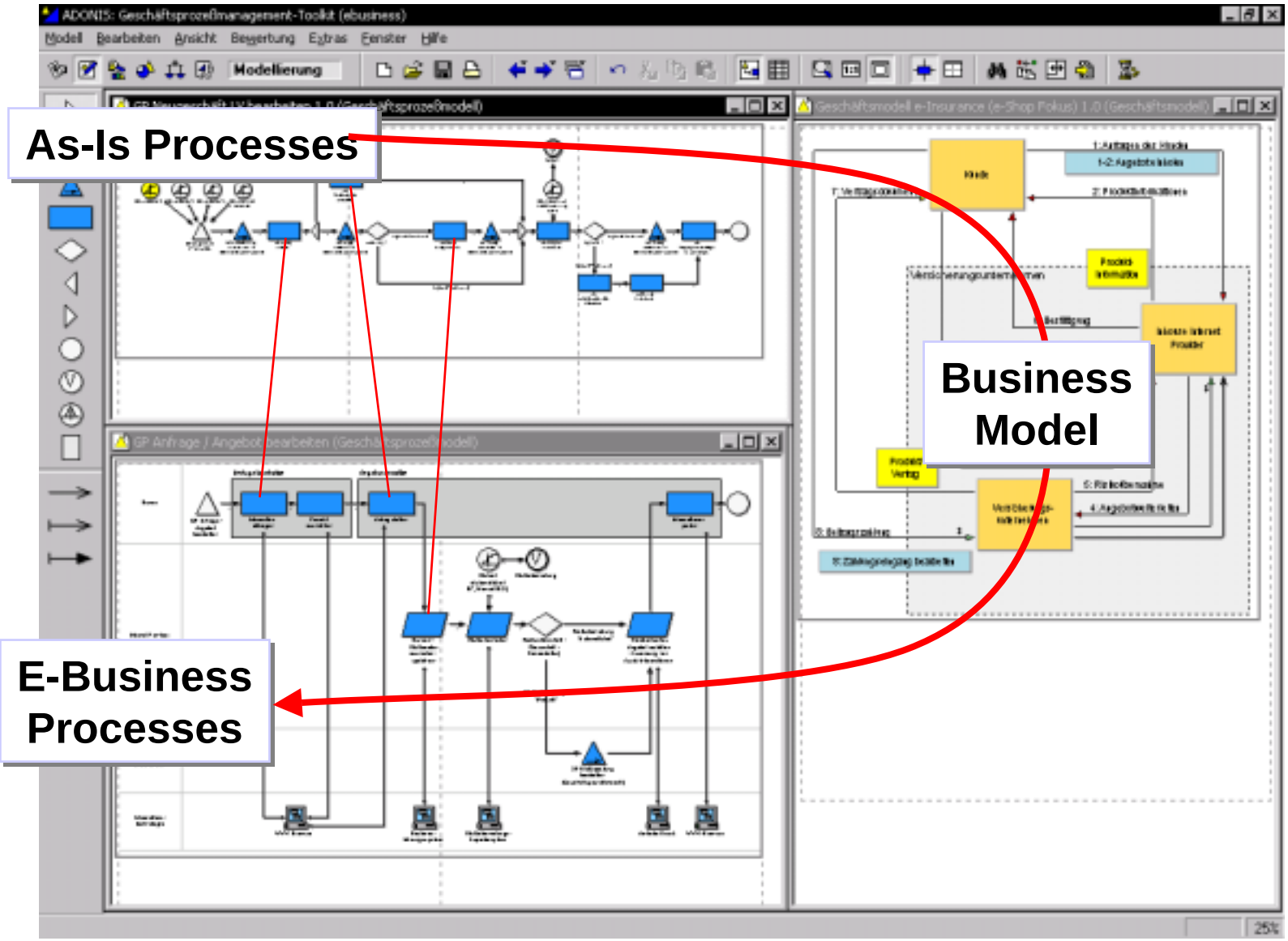
Product



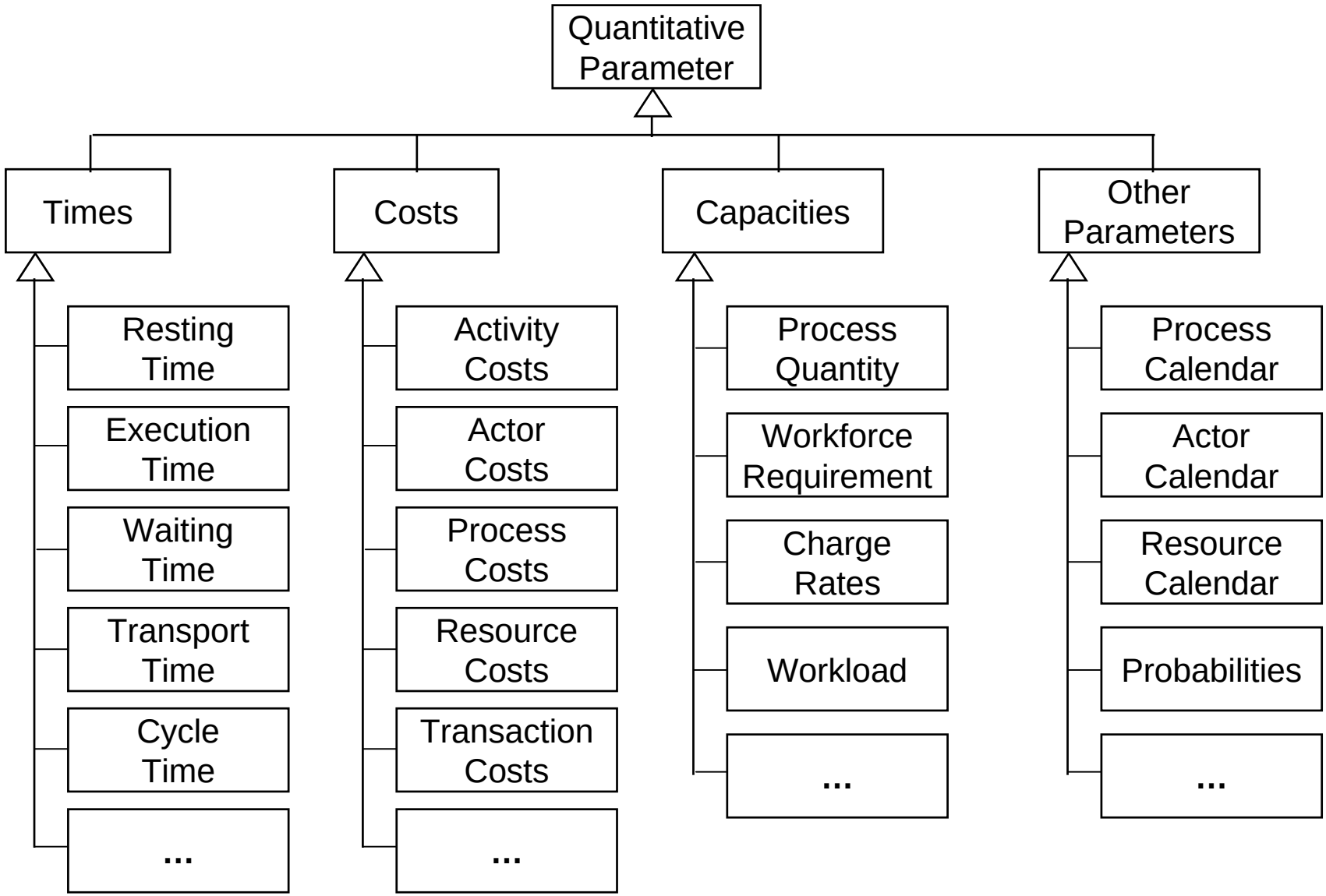
Process



Structural Optimization



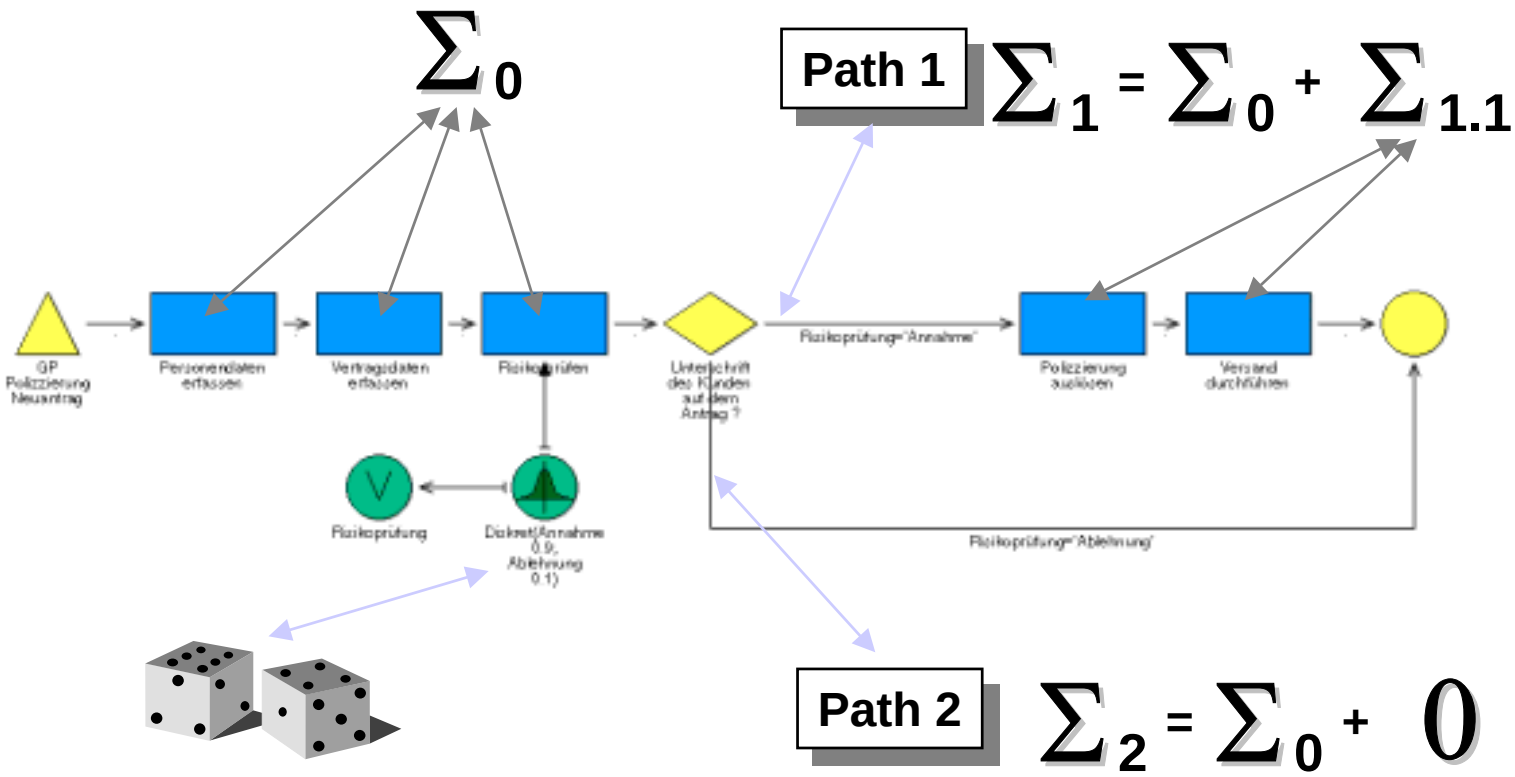
Dynamic Optimization – Typical Parameter



Dynamic Optimization – Path Analysis

- **Simulation of processes without considering the working environment**

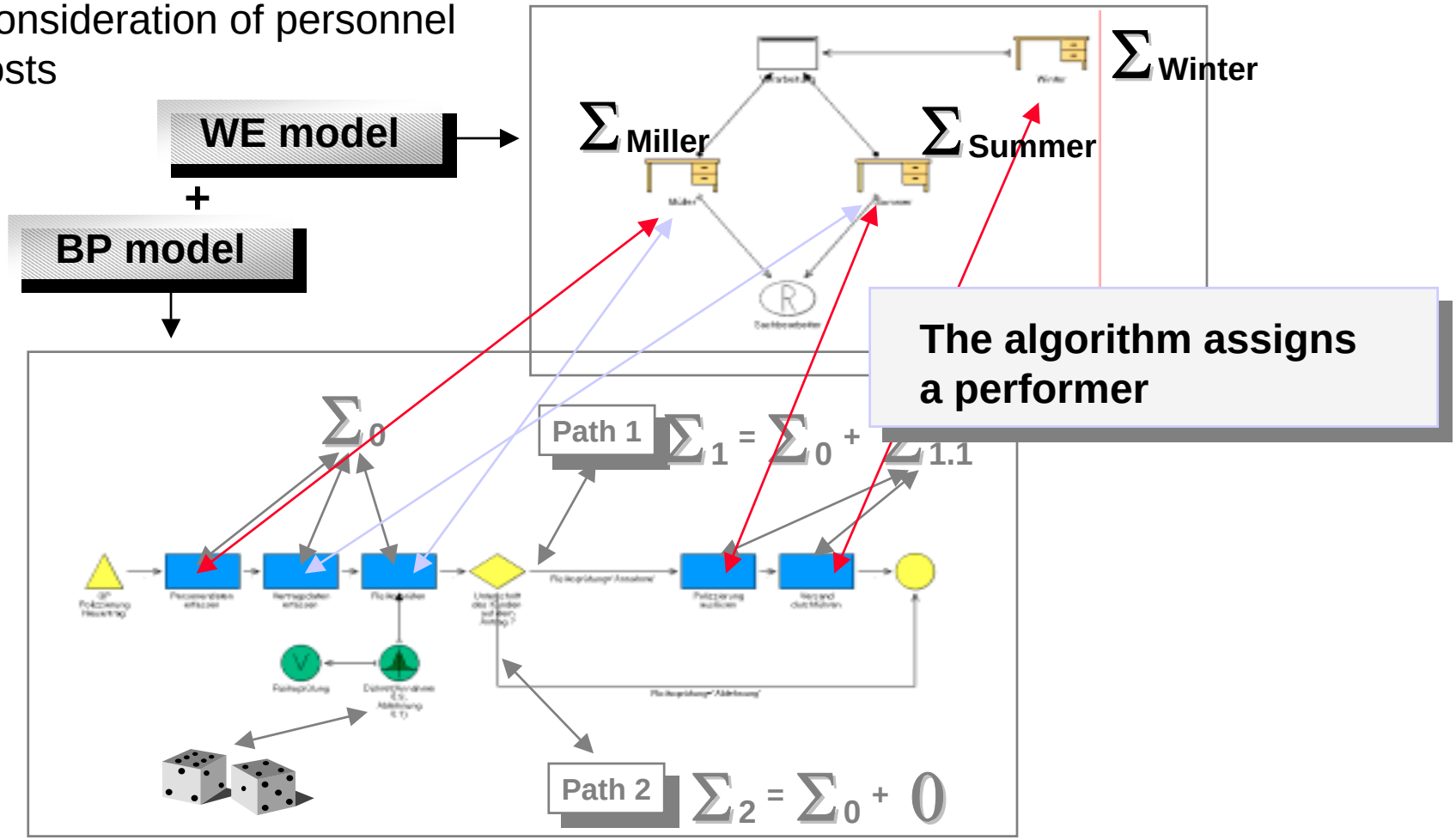
- Expected value of times and costs, cycle time
- Critical paths / dead paths
- Determination of the potential workforce requirement



Dynamic Optimization – Capacity Analysis

- **Simulation with assignment of activities to performers**

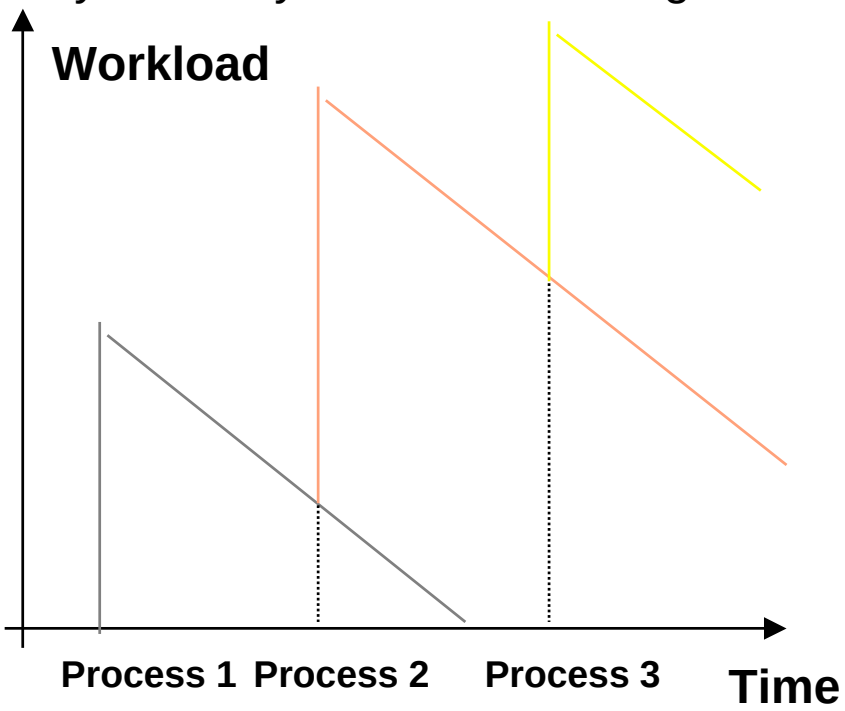
- Exact determination of workforce requirement (capacity planning)
- Consideration of personnel costs

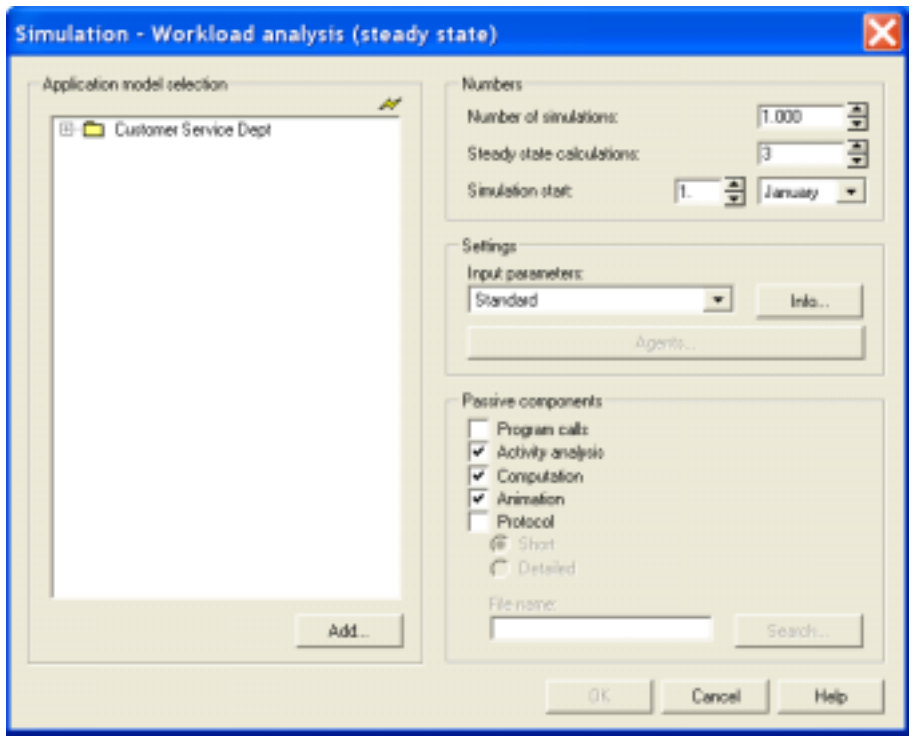


Dynamic Optimization – Workload Analysis

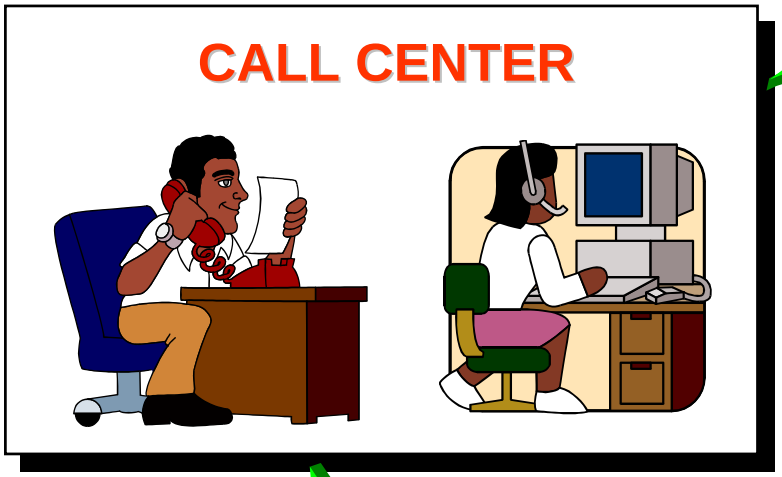
- **Simulation considering the timeline (queuing model)**

- Activity and process costs
- Capacity planning and workforce management based on process and performer calendars
- Initialization phases
- Simulates on timeline (in comparison to path and capacity analysis)
- Dynamically calculated waiting times





Example - Call Center



Protocols from ACD Machine ....

- Online times
- Attendance times
- Call rates

Creation of BP and WE models

Consider operational data within models for evaluations "close to reality"

BP models

WE models

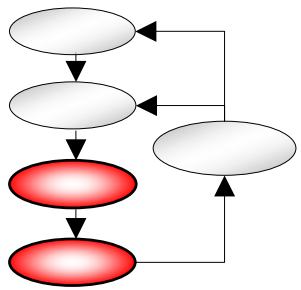
Execution of workload analysis:
- waiting times
- workloads
- costs
- ...

Metrics of customer satisfaction
➔ agents
Definition of measurements

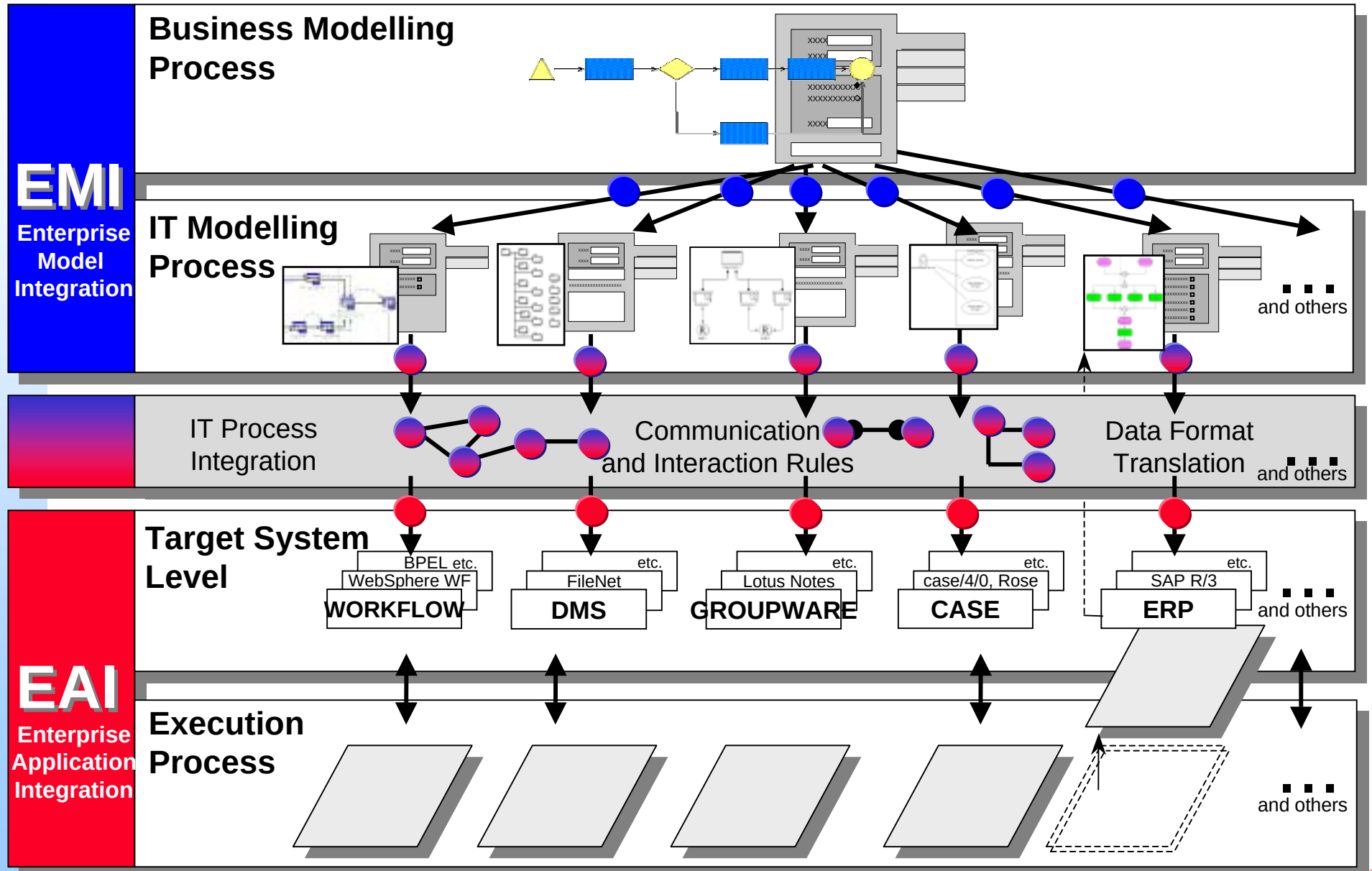
Example – Health Care

Live Example “Patient Admission”

Part IV
Business Process Execution



From Business Process Modeling to Process Execution

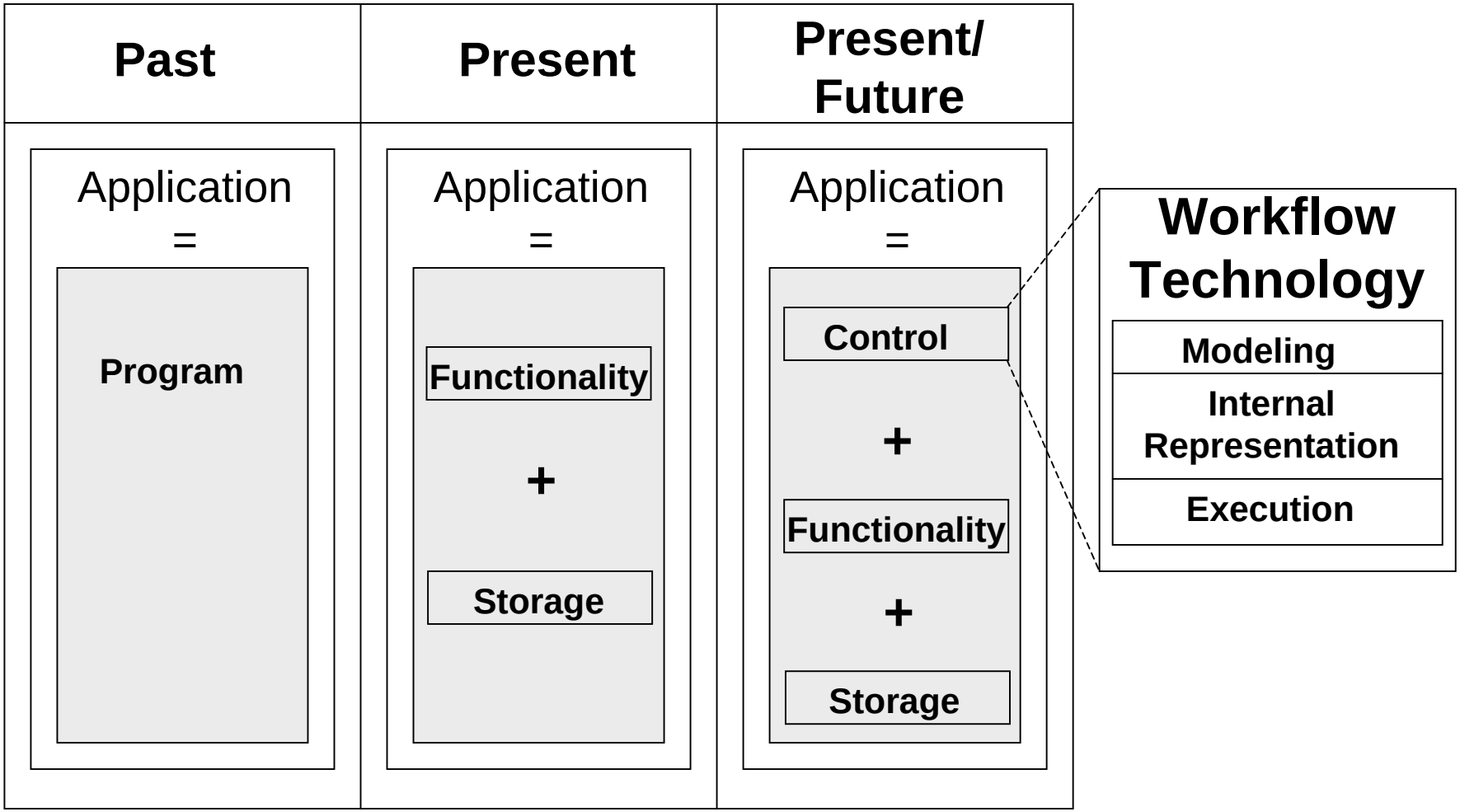


From Business Process Modeling to Process Execution

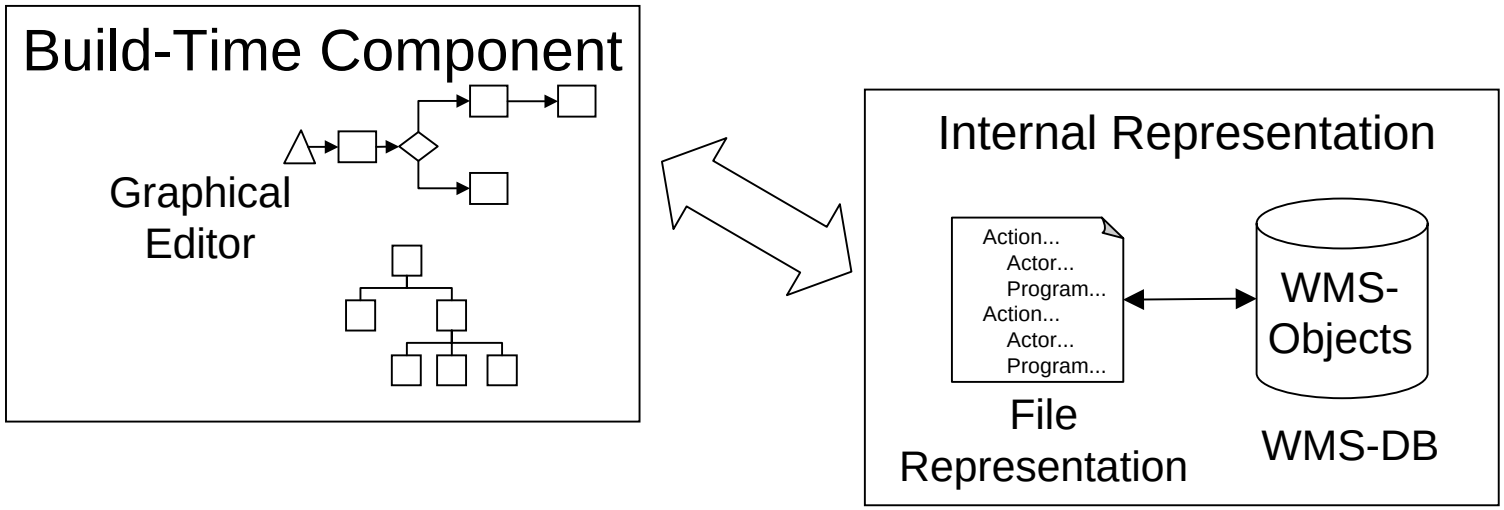
3 examples of process technologies:

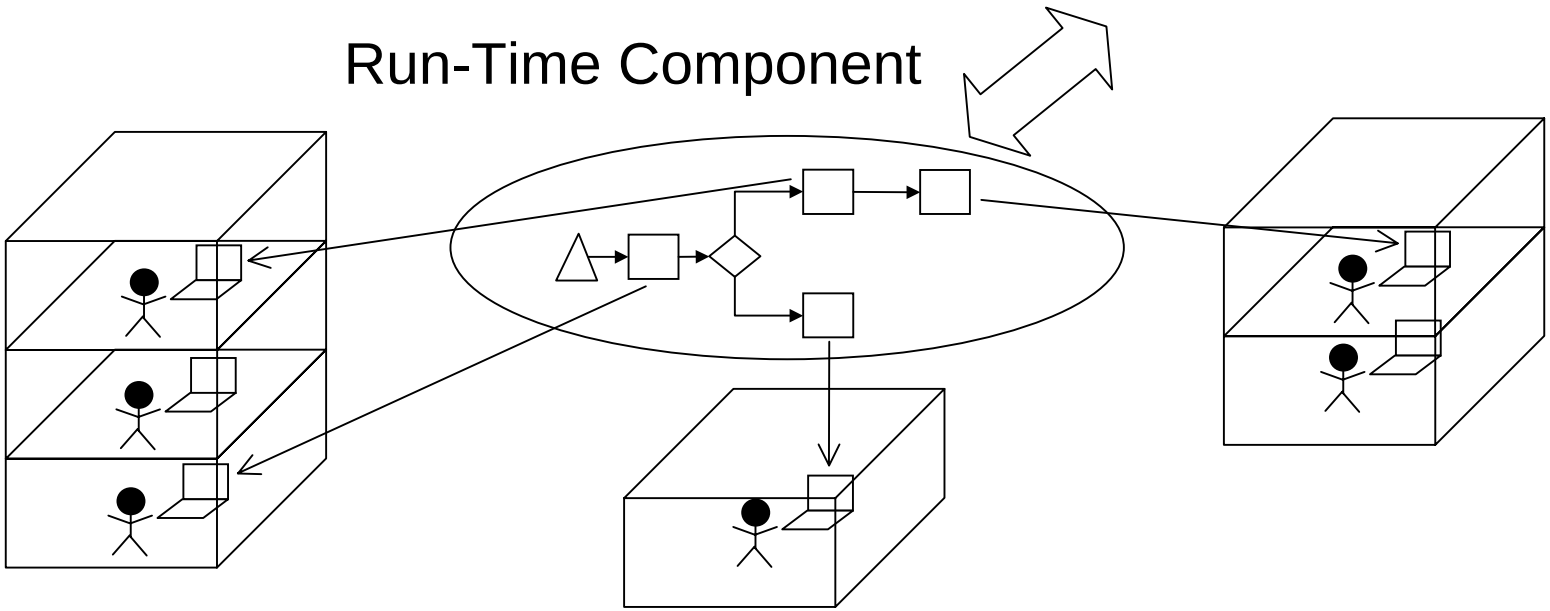
- **Workflow Technology**
- **ERP Technology**
- **E-Business Technology**

Workflow Technology: Evolution of Application Development

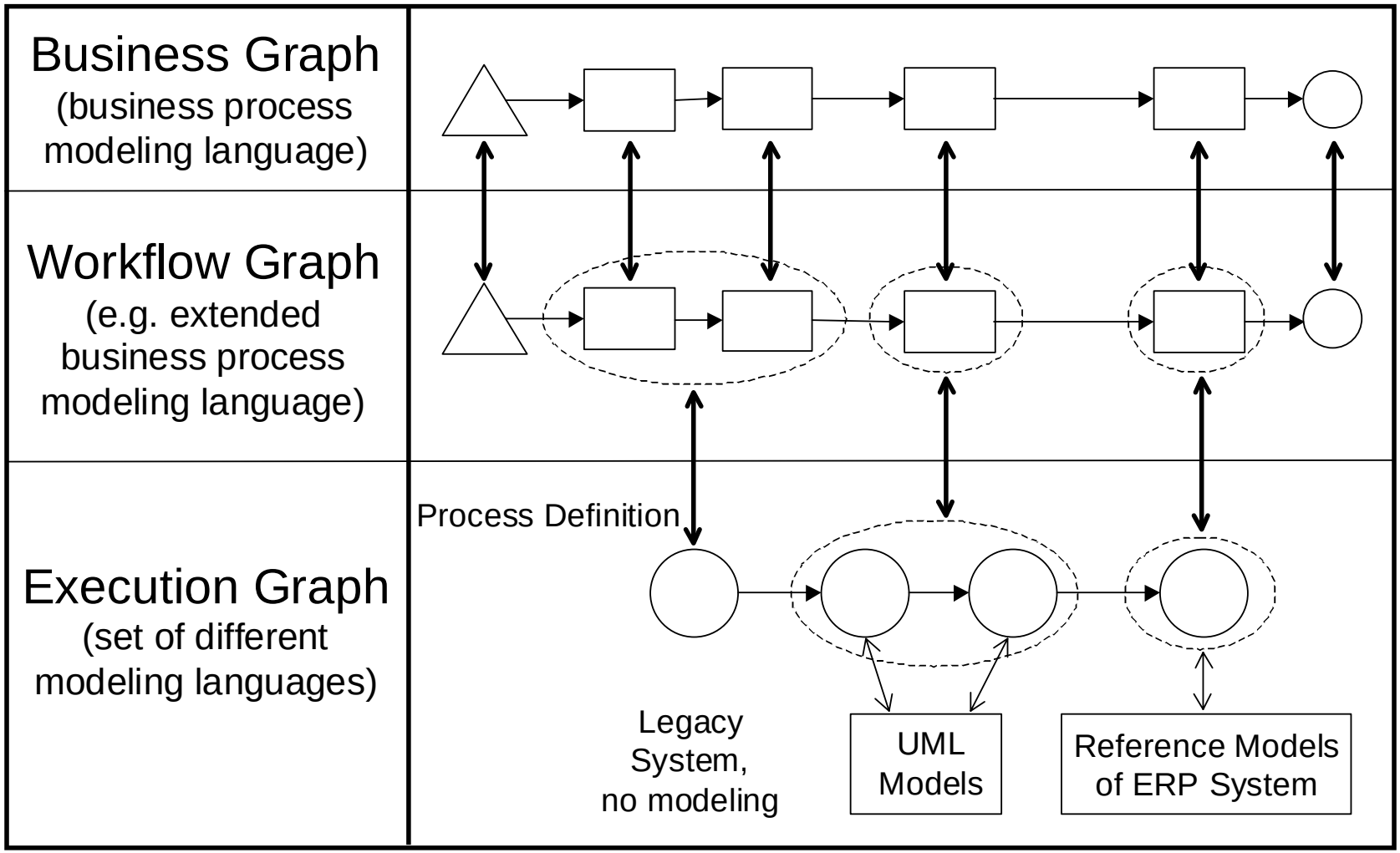


Workflow Modeling: Basic Modeling Concepts



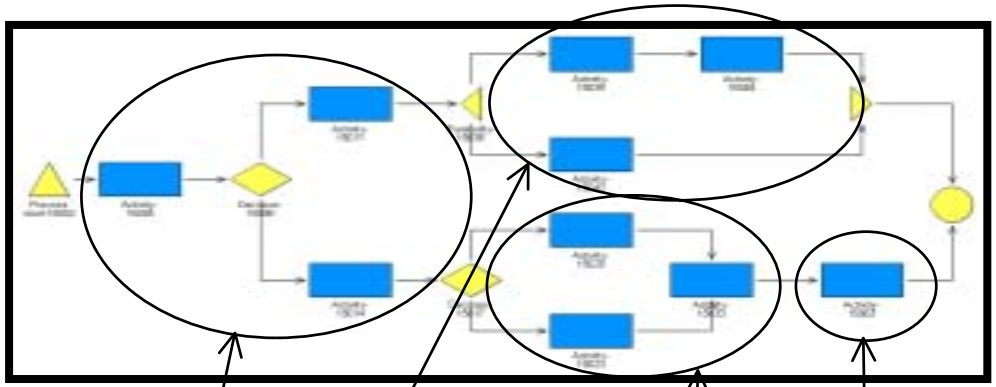


From Business Graph to Execution Graph



Workflow-based Enterprise Application Integration

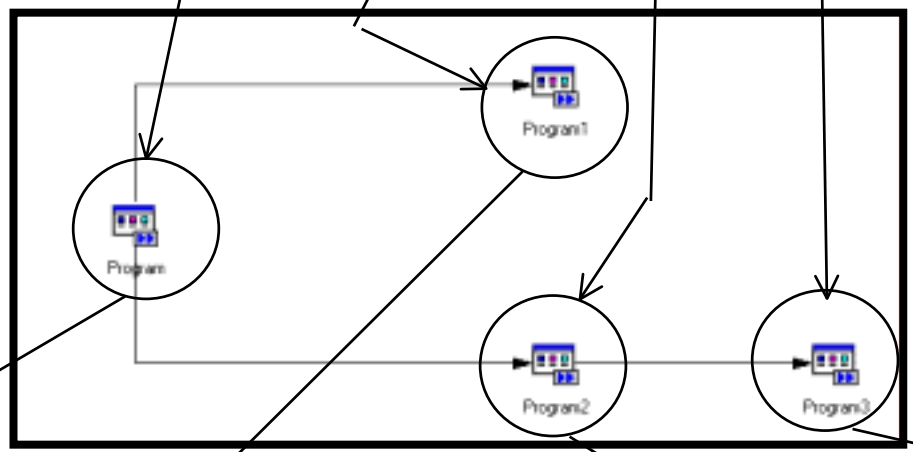
Business Graph
(e.g. within ADONIS®)



modeled by

Business Specialist

Execution Graph
(executed by WMS's Runtime)

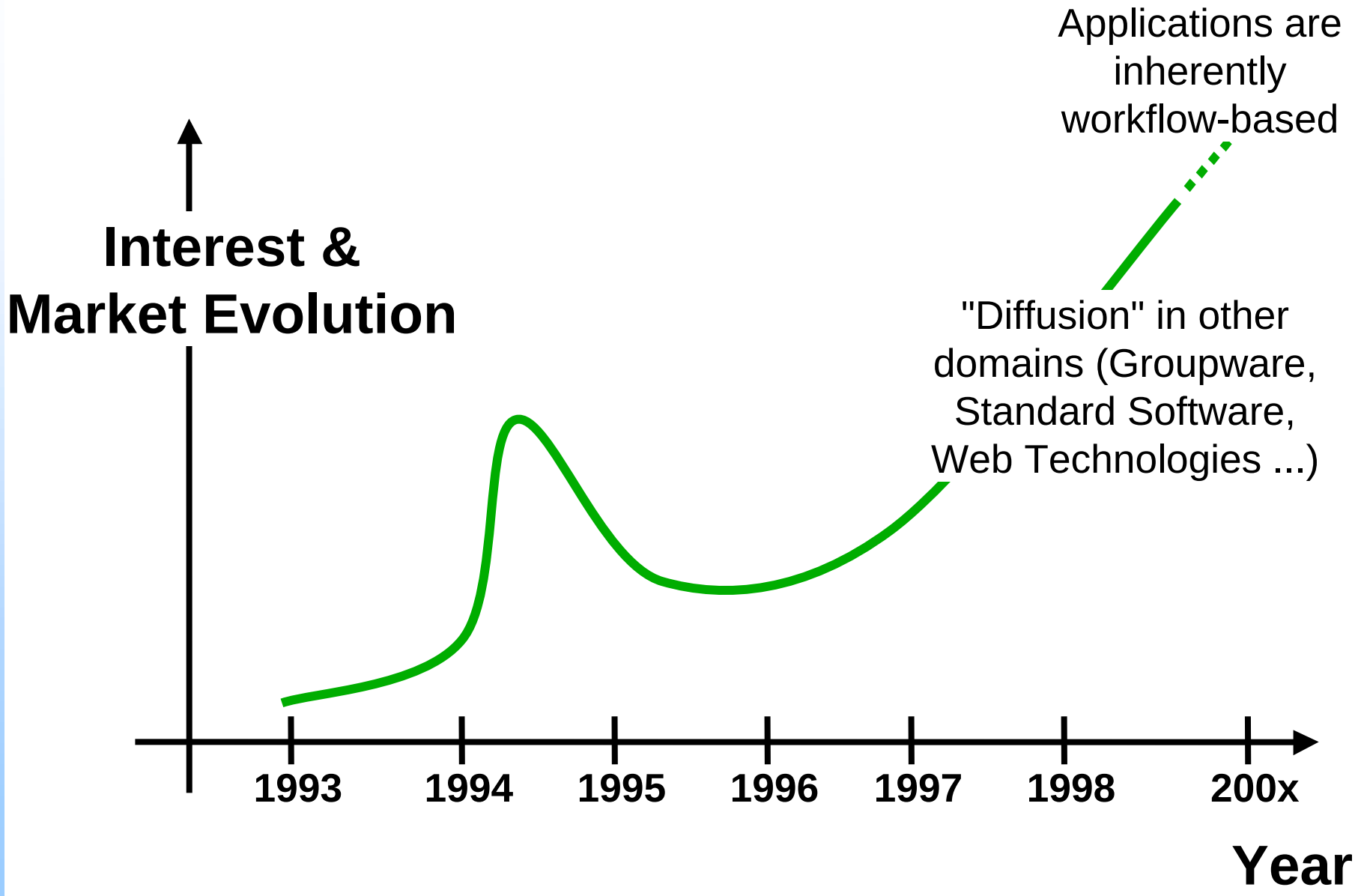


completed by

IT Specialist

Groupware | **Legacy System (1)** | **Legacy System (2)** | **SAP**

Workflow Technology: Interest



Implementing Business Processes with ERP Technology – 1/4

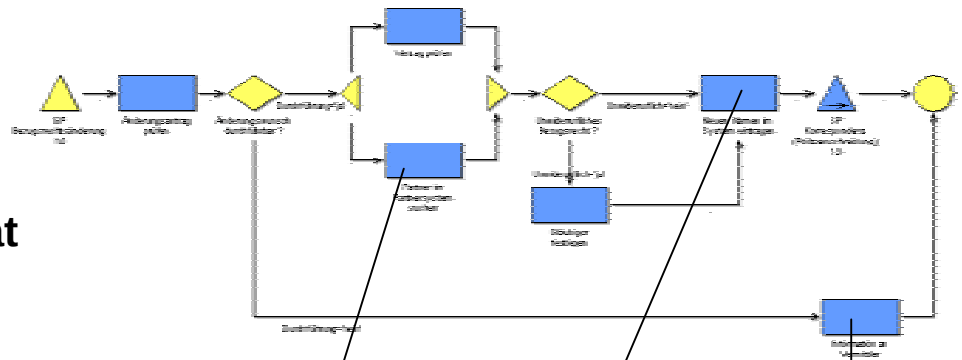
Explicit representation of the business and the IT view

➡ **Use of the SAP R/3® reference processes**

Business view:

Workflow-oriented

„What is everything that has to be done?“

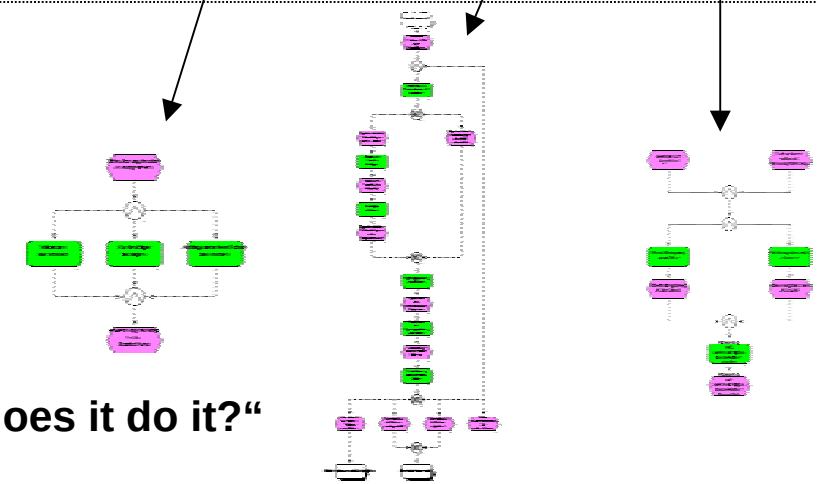


Simulation:
- **Volume analysis**
- **Capacity analysis**

Process costs calculation

IT View:

Event oriented



Analysis:
- **Costs**
- **Times**
- **...**

„What does R/3 do and how does it do it?“

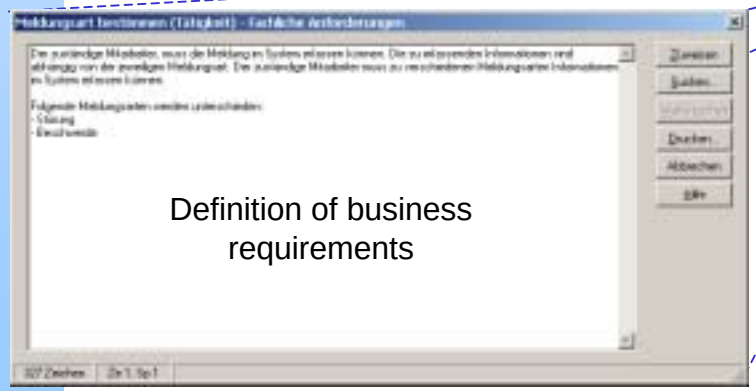
Implementing Business Processes with ERP Technology – 2/4

Explicit representation of business and IT views

➡ **Use of the SAP R/3® reference processes**

Themes:

- ✓ Representation of business processes
- ✓ Representation of IT processes
- ✓ Mapping
- ✓ Requirements definition
- ✓ Documentation of IT functions
- ✓ Integration of external documents
- ✓ Direct call of SAP R/3® transactions
- ✓ Customizing of the documentation



Definition of business requirements

Business process

IT process

Mapping

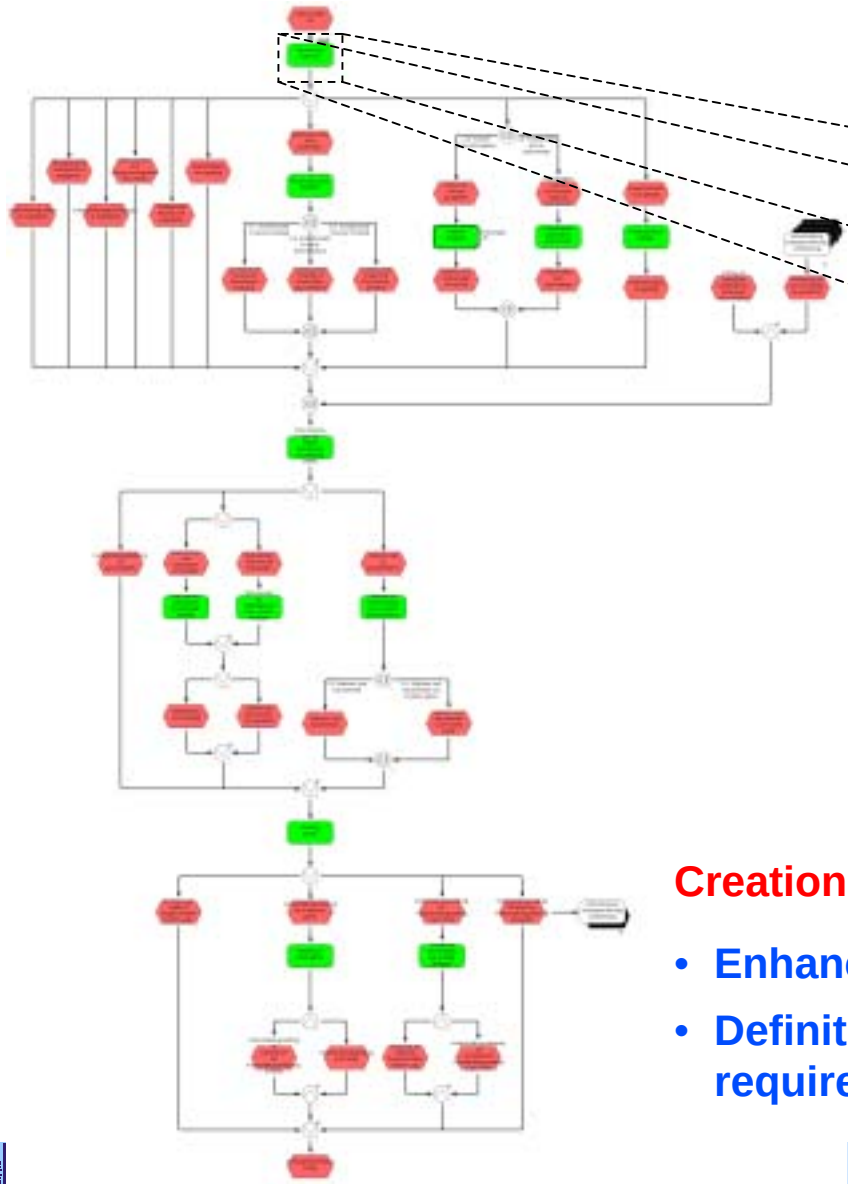
Direct call of SAP R/3® transactions

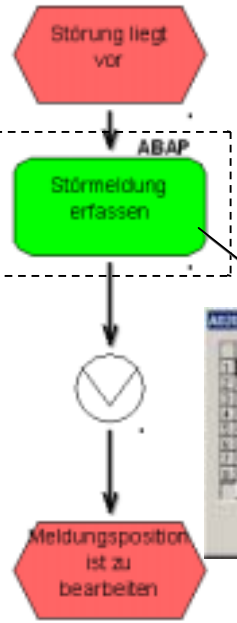
Documentation of IT functions

Integration of external documents

Implementing Business Processes with ERP Technology – 3/4

If R/3 Functionality is not sufficient:





SAP-Standard

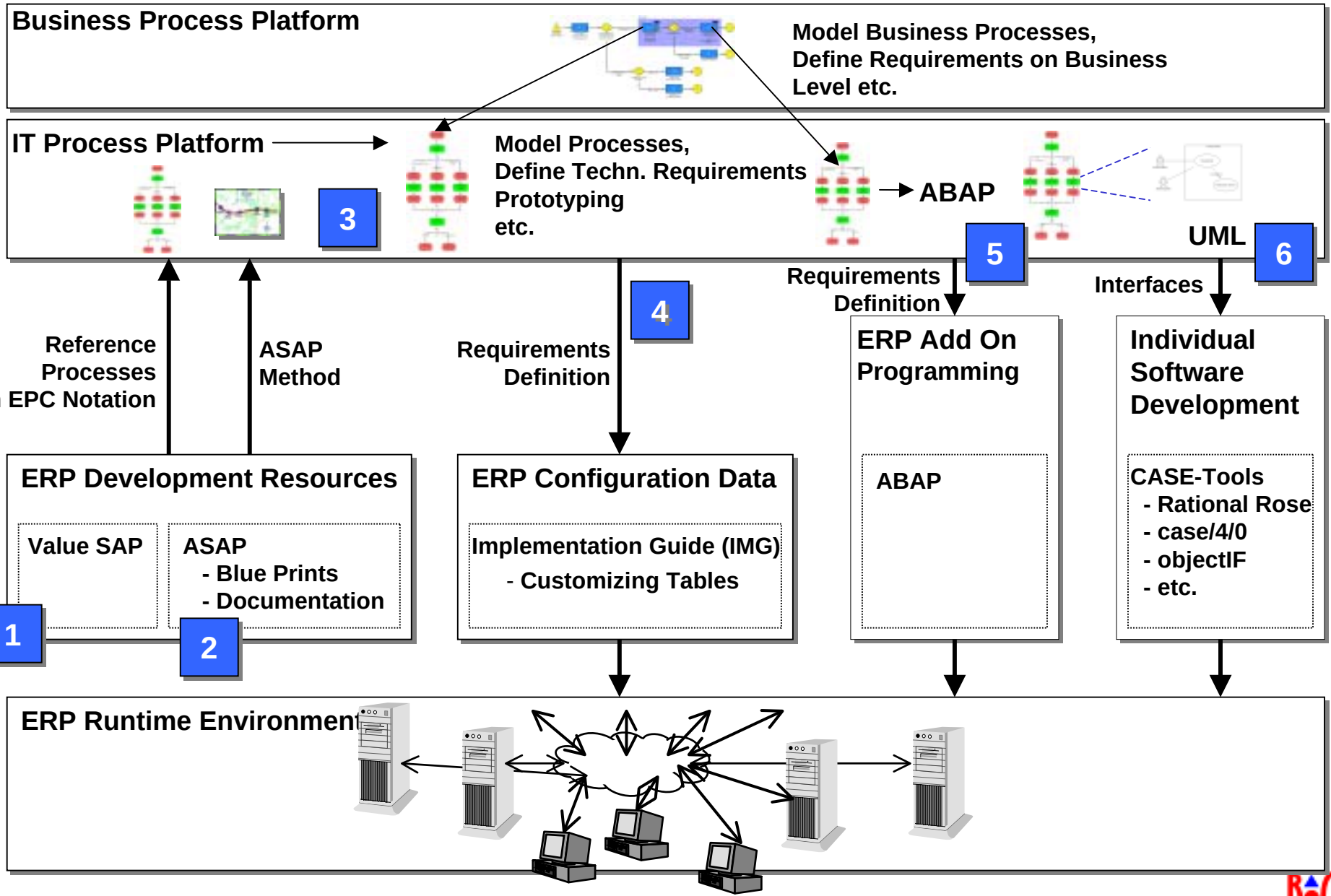
+ Add On Programming (ABAP)

+ External Add On Programming (e.g. usinge UML etc.)

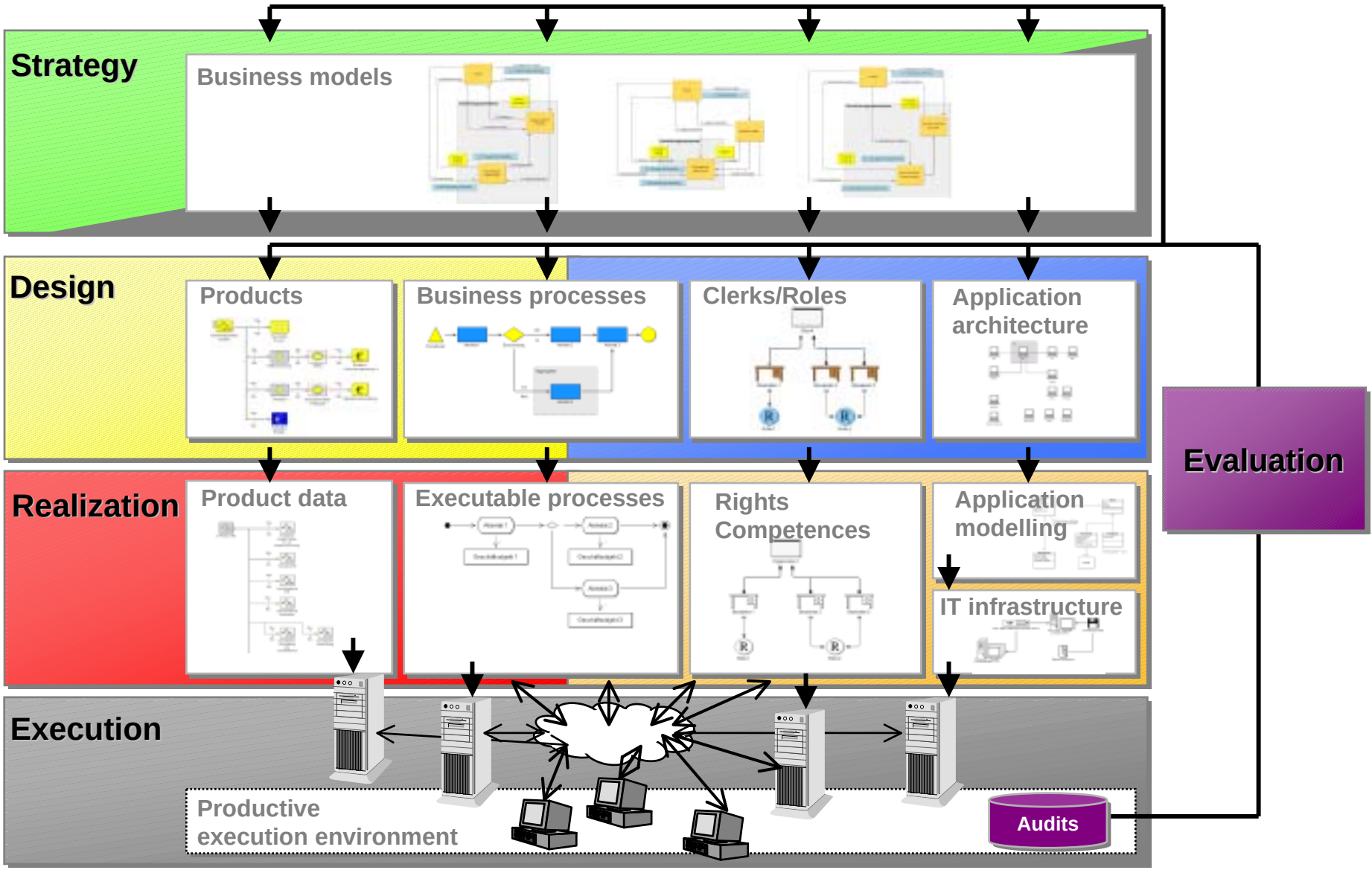
Creation of new process objects:

- **Enhancement of existing processes**
- **Definition and documentation of requirements**

Implementing Business Processes with ERP Technology – 4/4

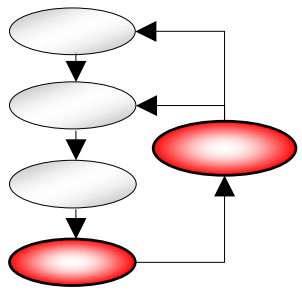


Realization of E-Business Applications – 1/2

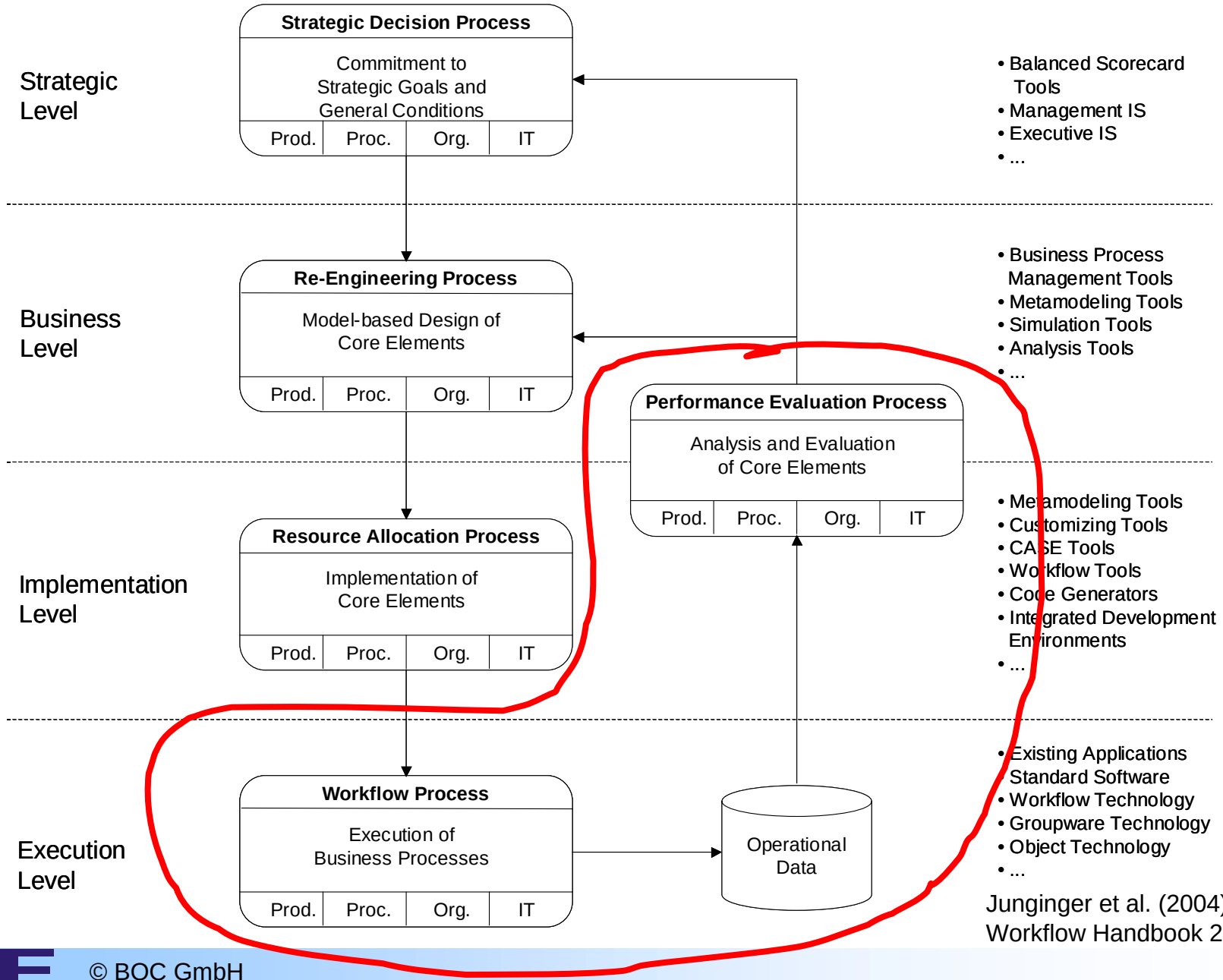


Live Example
“B2B Insurance Platform”

Part V
Business Process Monitoring

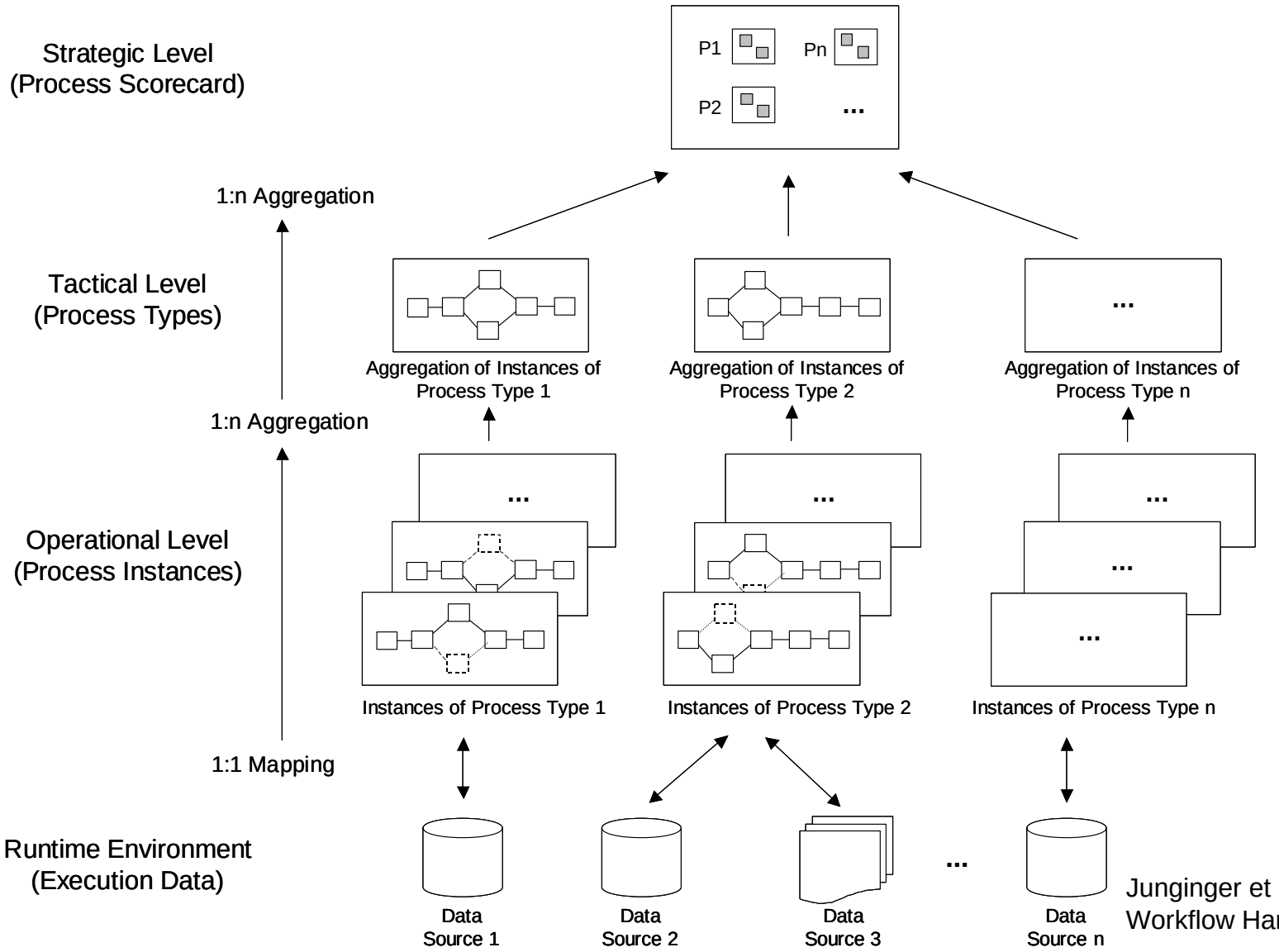


Workflow-based Business Monitoring



Junginger et al. (2004): Workflow Handbook 2004

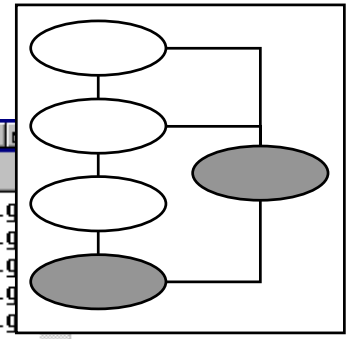
Levels in Workflow-based Business Monitoring



Junginger et al. (2004): Workflow Handbook 2004

Workflow-based Monitoring: Operational Level

Process Instances



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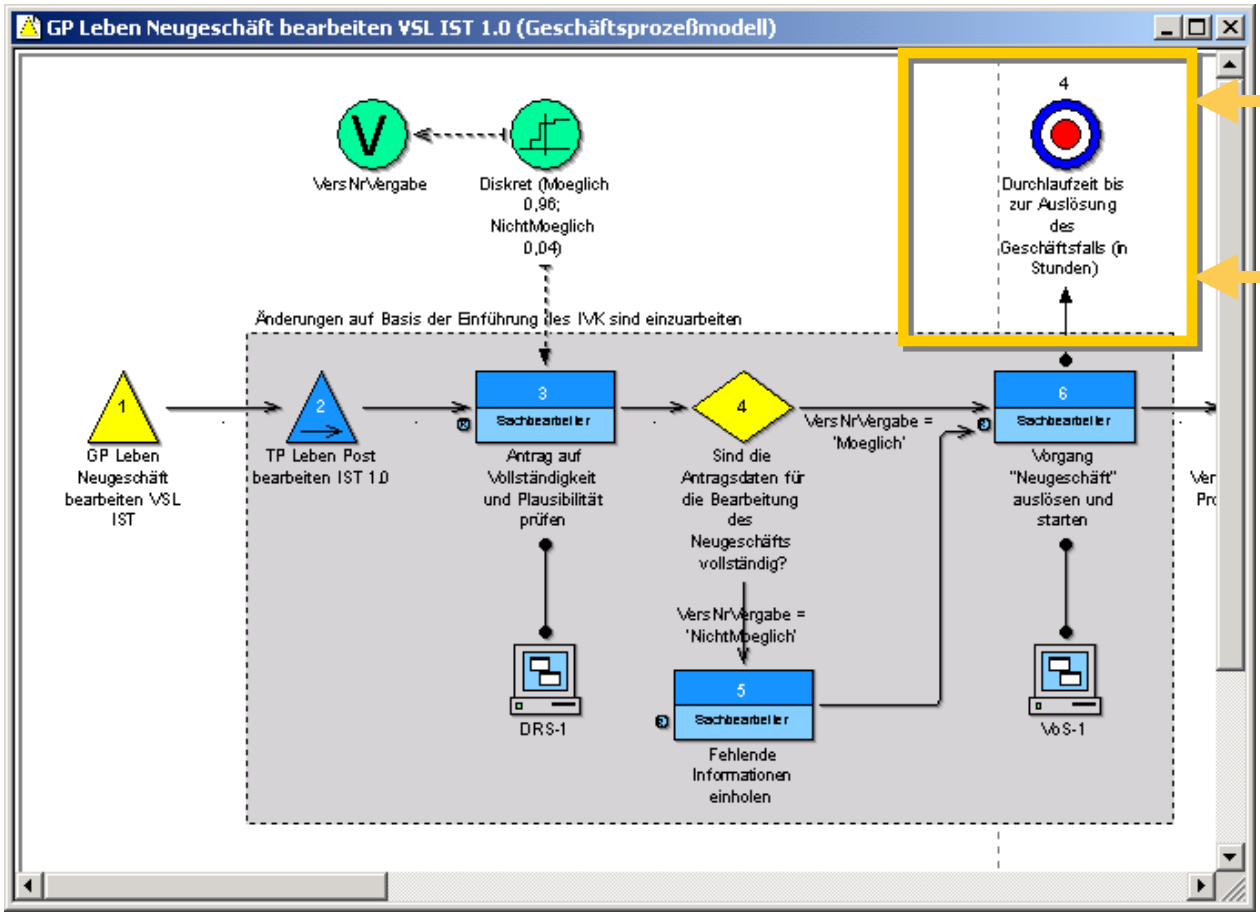
Workflow-based Monitoring: Tactical Level

Scenario: The business process models serve as "business guideline" into operational data



OFFLINE & ONLINE

Excel Sheets

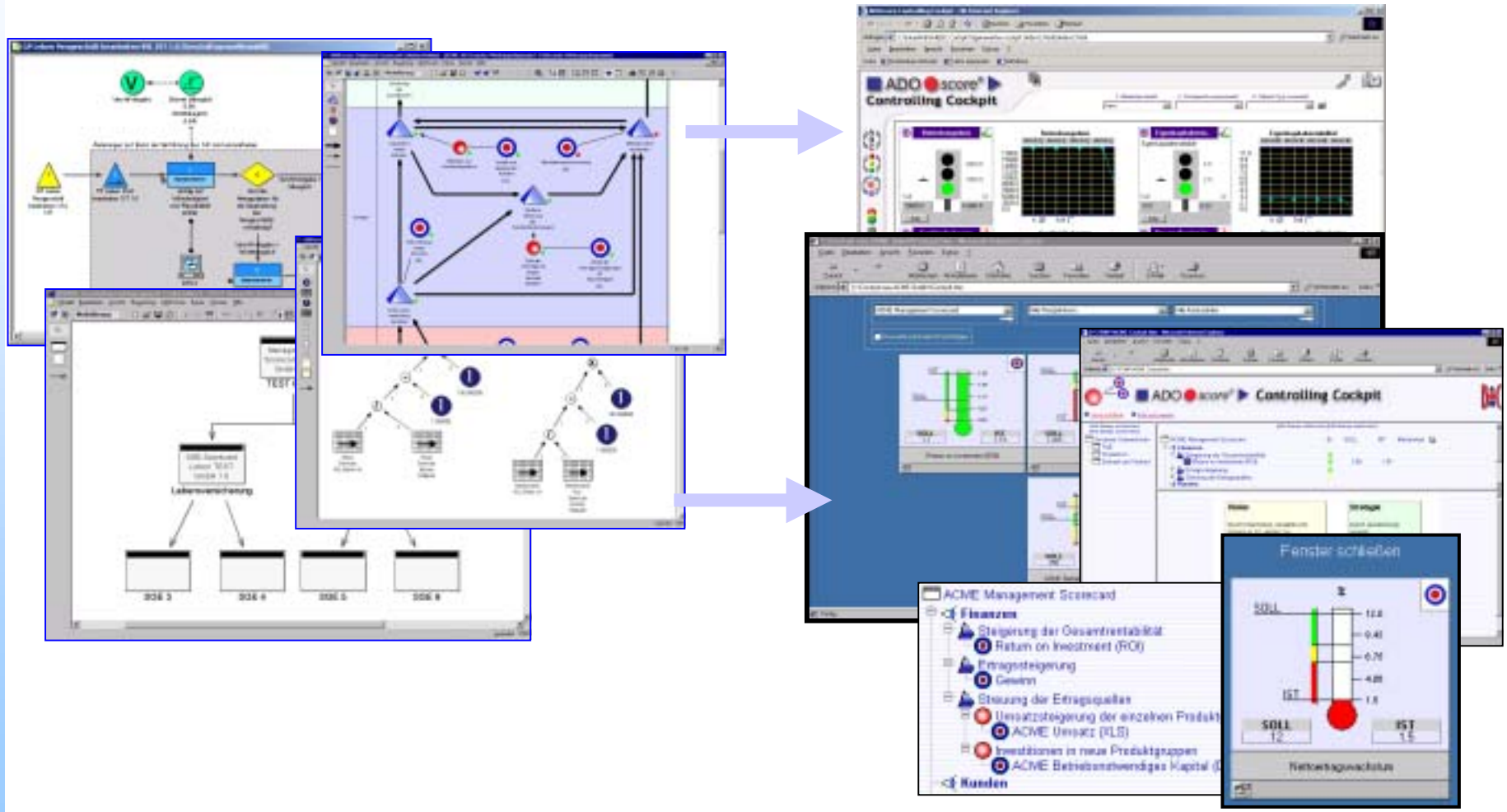
or optional

Snapshot Database (with operational data)

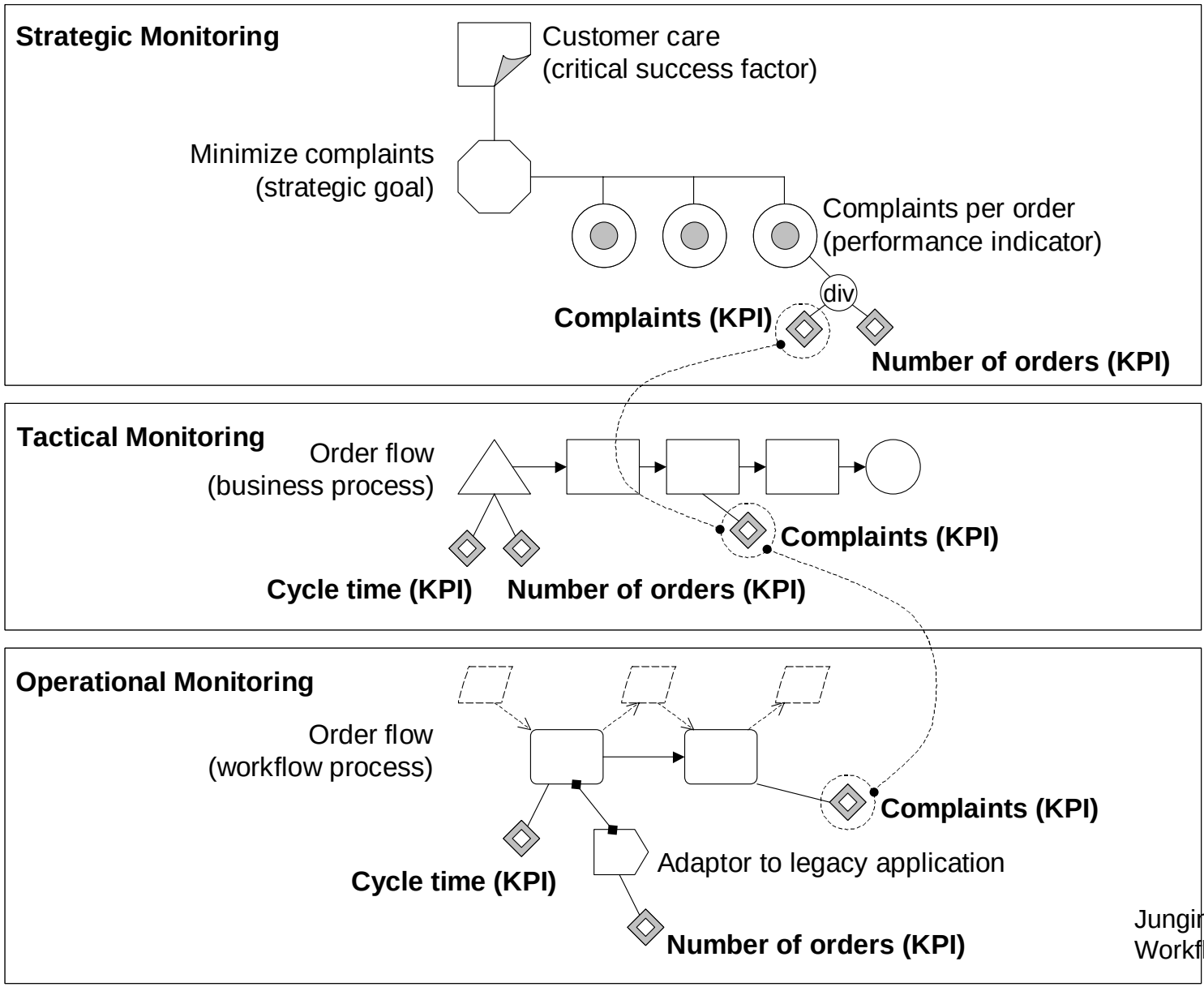
DB_1 DB_2 ... DB_n

Workflow-based Monitoring: Strategic Level

- **Generation of Management- und Controlling-Cockpits from model and operational data.**

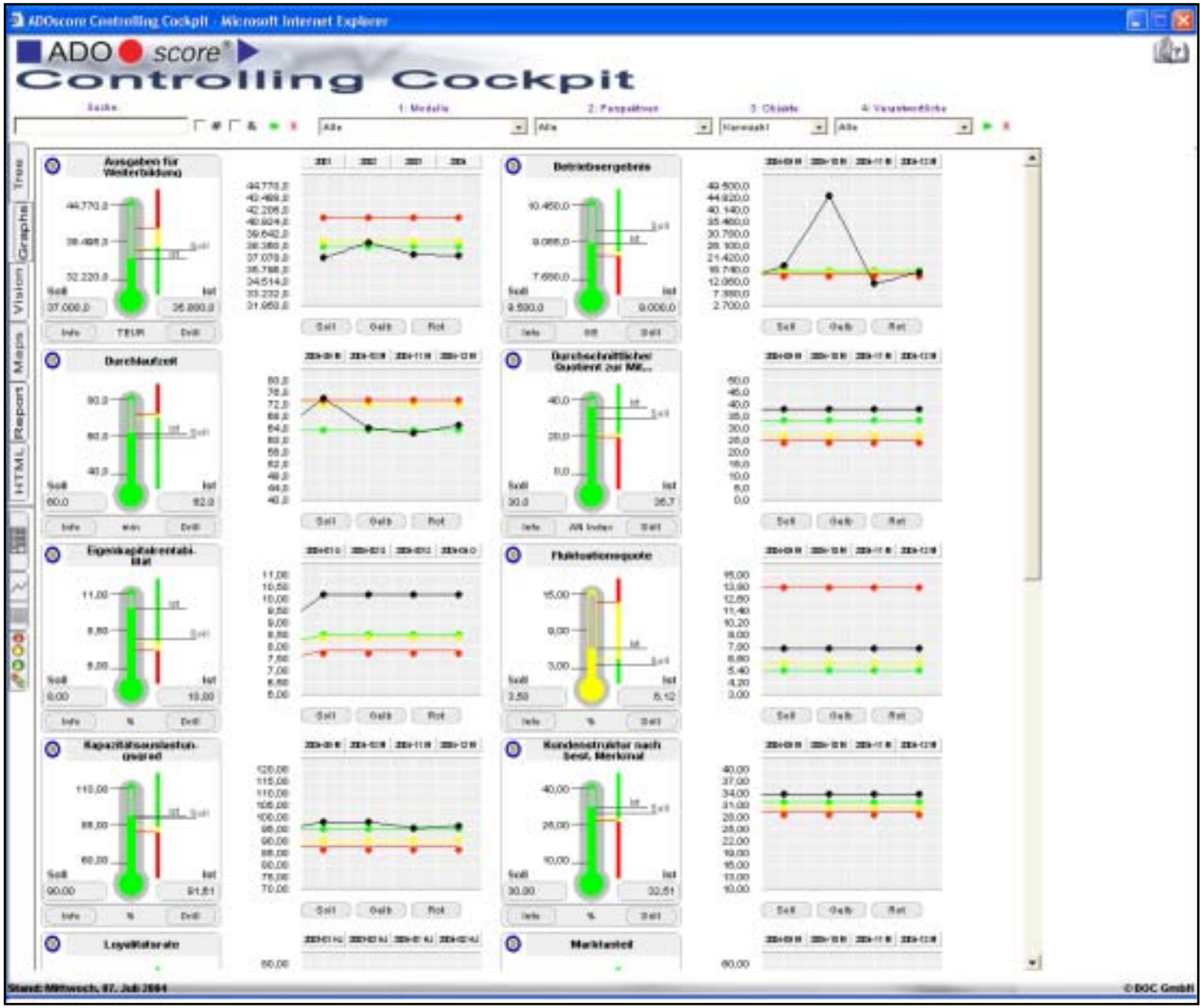


Workflow-based Monitoring: Direct Sales Example

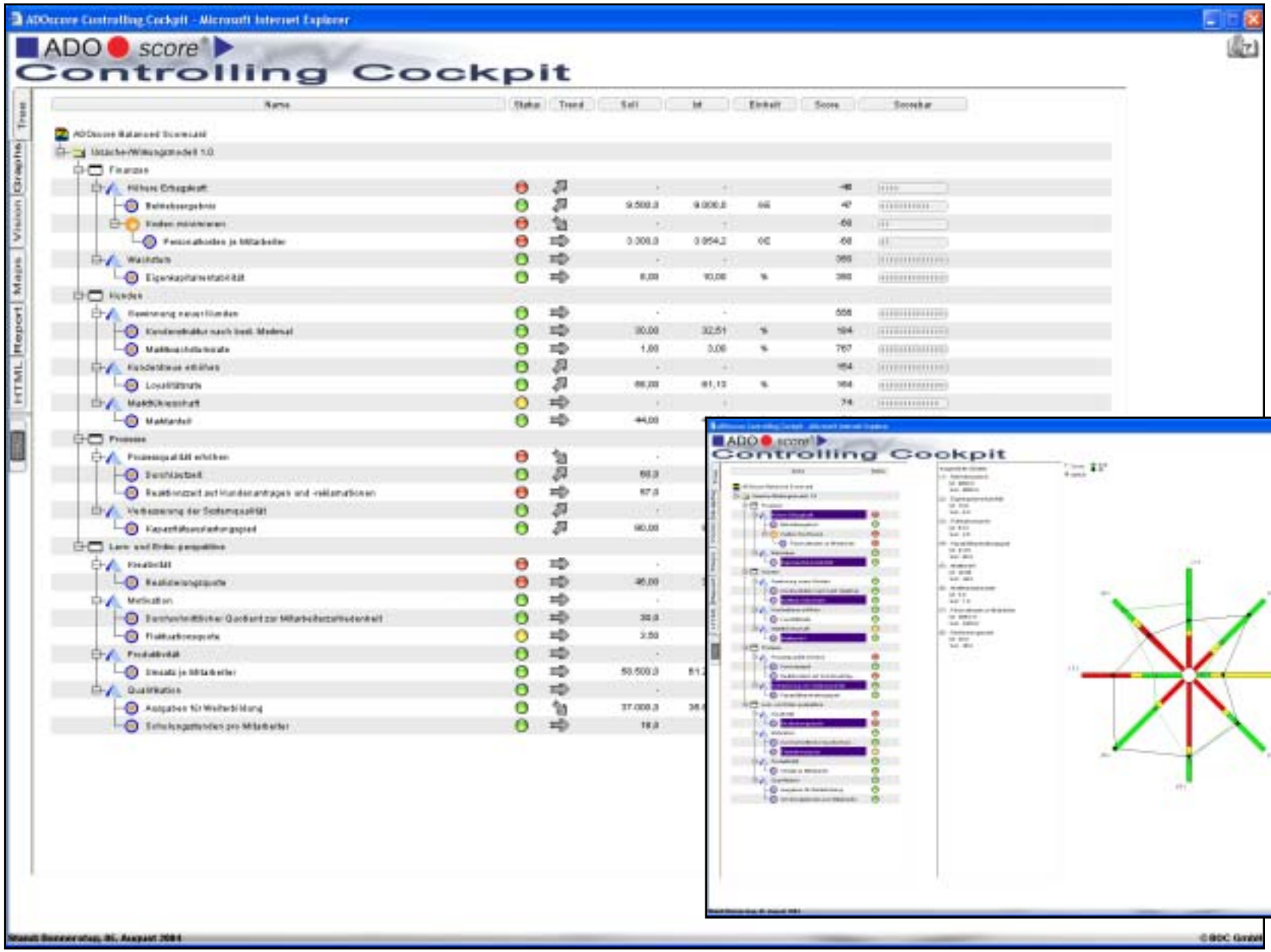


Junginger et al. (2004):
Workflow Handbook 2004

Workflow-based Monitoring: Example of Cockpit – 1/2



Workflow-based Monitoring: Example of Cockpit – 2/2



Part V
Summary & Outlook

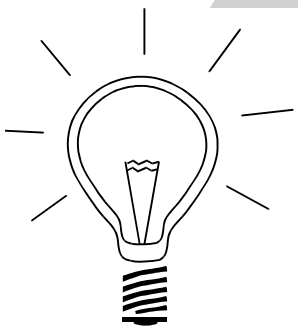
Business Processes are Knowledge

A business process is...

... not only a logical **sequence of activities**, which is **executed by roles** at a certain point of **time** at a certain **place**…

... but ...

...the **know how platform** of a corporation...



…and is realized by **value chains**, which serve for achieving the **strategic company goals**.

(Karagiannis 2000)

Some Predictions…

- Creation of corporation-wide, model-based Know-How-Pools.
- Business processes are the "cement" for Enterprise Application Integration (EAI).
- Models get a central part of IT applications.
- Combination of modeling paradigms (e.g. descriptive-, decision support-, predictive models etc.).
- Online Monitoring and Benchmarking according to enterprise models (business processes, scorecards etc.).

Thank you very much for your attention!

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