Institute for Information Systems (IWi)
at the German Research Center for Artificial Intelligence (DFKI GmbH)

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Collaborative Business Process Modeling with CoMoMod

- A Toolkit for Model Integration in Distributed Cooperation Environments

2nd International Track on Collaborative Modeling & Simulation (CoMetS'11)

20th IEEE International Conference on Collaboration Technologies and Infrastructures (WETICE 2011)

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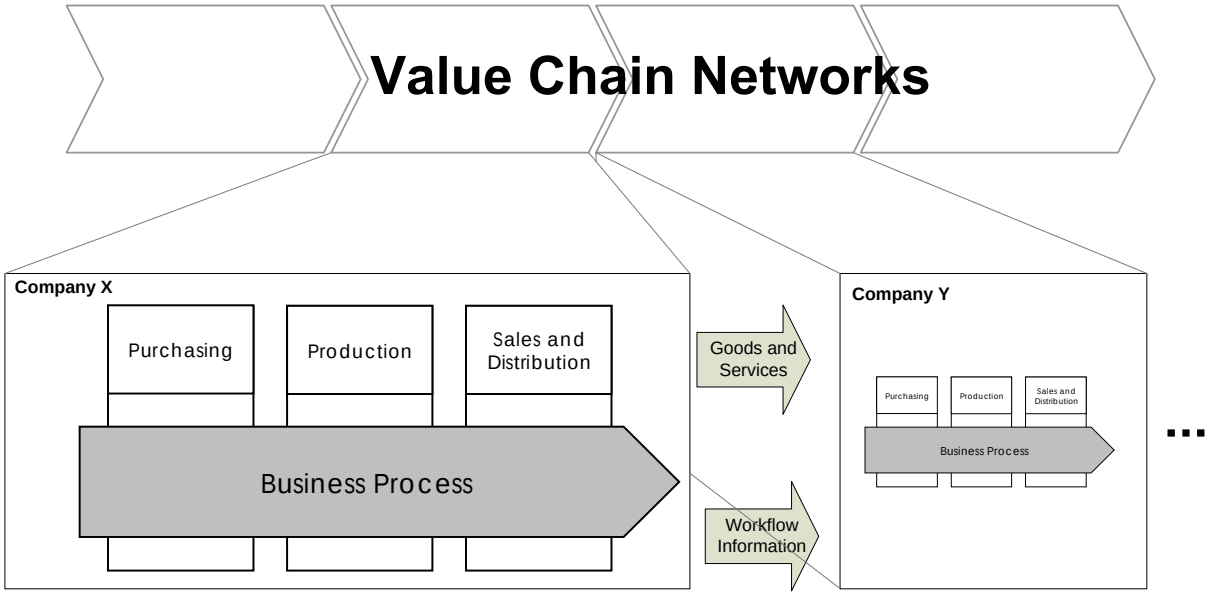
Agenda

1. Introduction and Conceptual Foundations
2. Goals and Research Approach
3. The CoMoMod-Tool – Procedure Model and Implementation
4. Discussion
5. Summary and Future Work

Current development

- Inter-organizational cooperation
- Cross-organizational information exchange
- Cross-organizational business processes and value chains

→ Collaborative Business Process Management

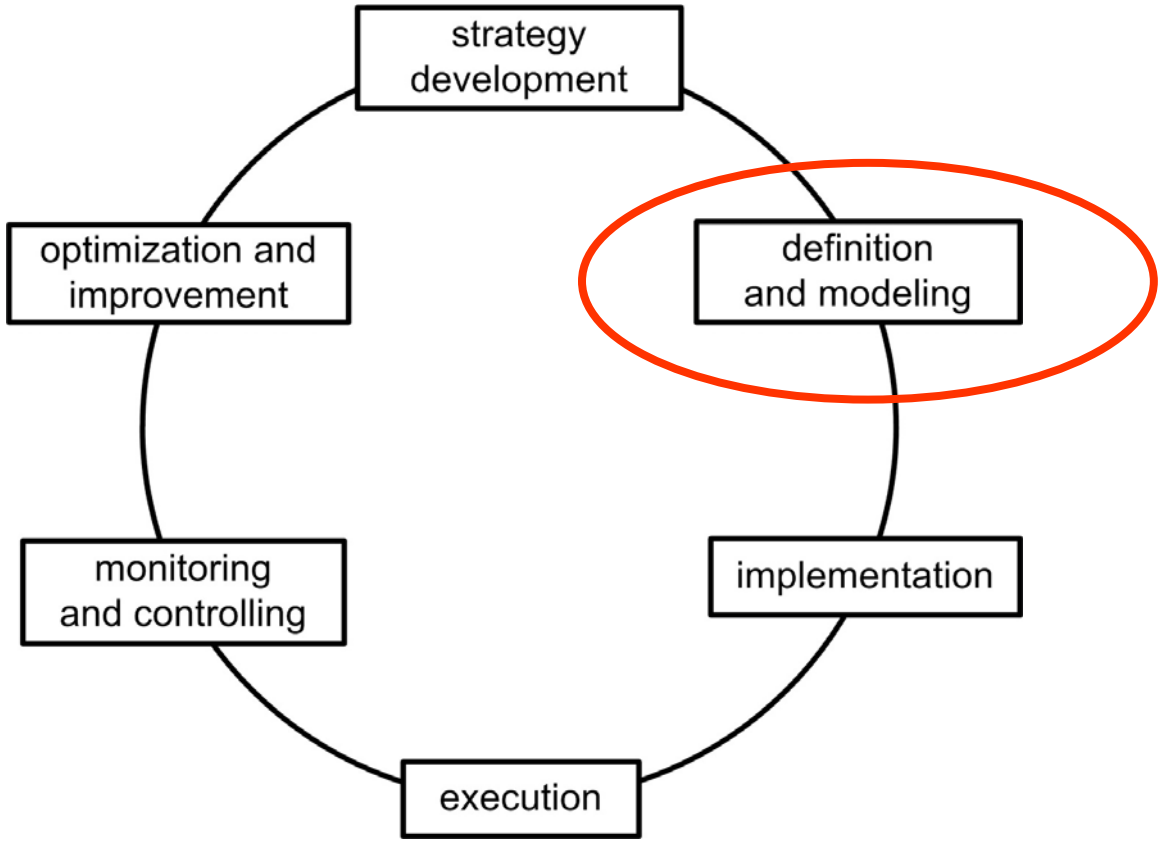


based on: *Houy, Fettke, Loos, van der Aalst, Krogstie 2010*

Business Process Management (BPM)

- Business Process: *sequence of executions for creating goods and services* (Scheer 1999)
- BPM: *techniques and tools for design, enactment, control and analysis of business processes* (van der Aalst et al. 2003)
- Purpose: effectiveness and efficiency of value creation, competitive advantage
- BPM tools and techniques widely applied in practice (Fettke 2009)

Business Process Management Life Cycle



based on: *Houy, Fettke, Loos 2010*

Collaborative Business Process Modeling

- Cooperative creation of models
- Integration of different perspectives on a process
- Shared understanding of models
- Management of complexity in inter-corporate value chain networks
- Management of manifold changes during life cycle

2. Goals and Research Approach

Goals of this presentation:

- Introduction of a concept (procedure model) and
- its implementation for collaborative modeling

Research approach:

- conceptual consideration
- design science approach (Hevner et al. 2004)

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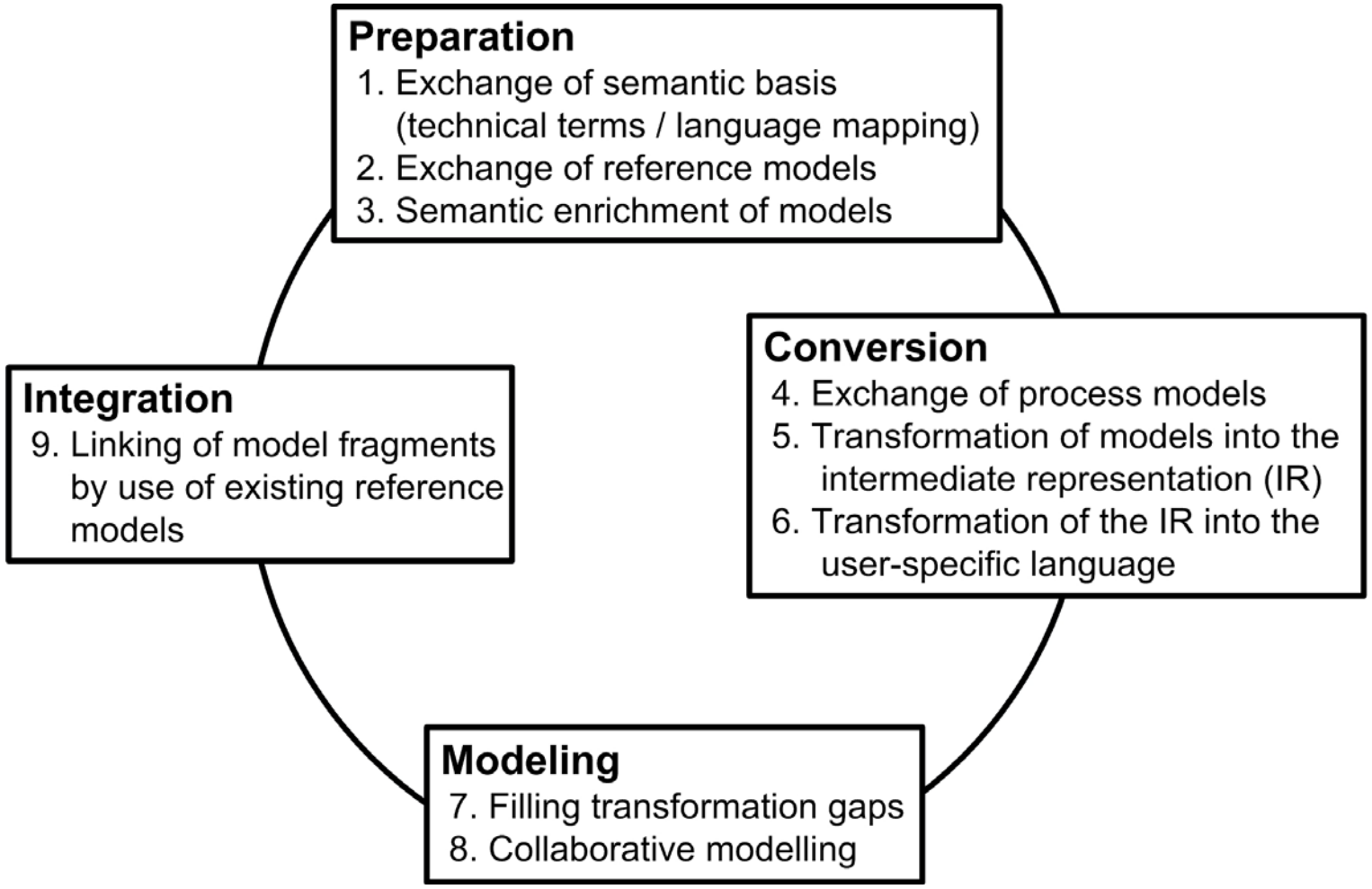
3. The CoMoMod-Tool

3.1 Requirements for the tool design

1. Support of simultaneous work (*one process model diagram instance*)
2. Integration of a communication component
3. Support of different modeling languages → mapping
4. Support of defined vocabularies for labeling model elements
5. Support of a semi-automated consolidation of model parts

3. The CoMoMod-Tool

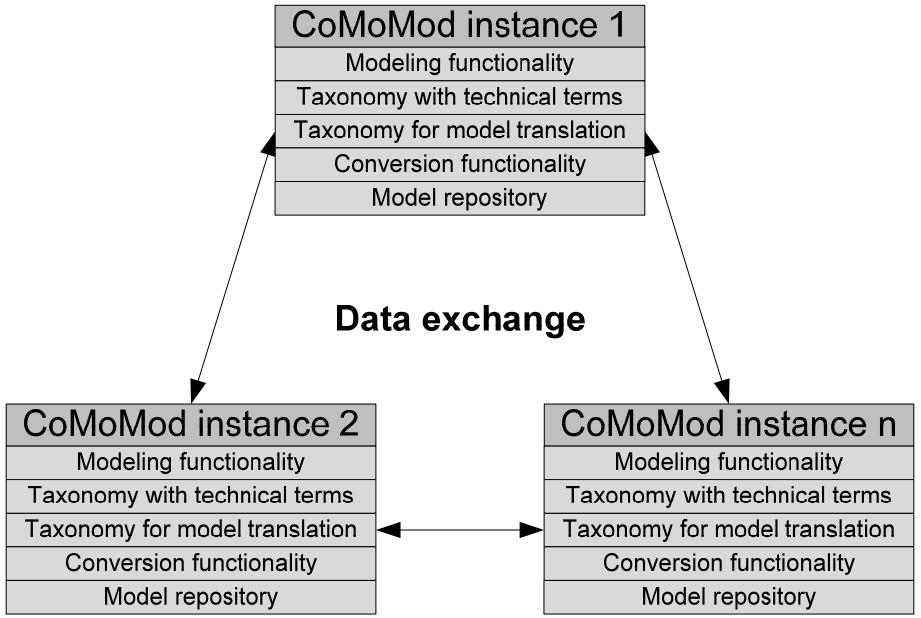
3.2 Procedure model for collaborative modeling



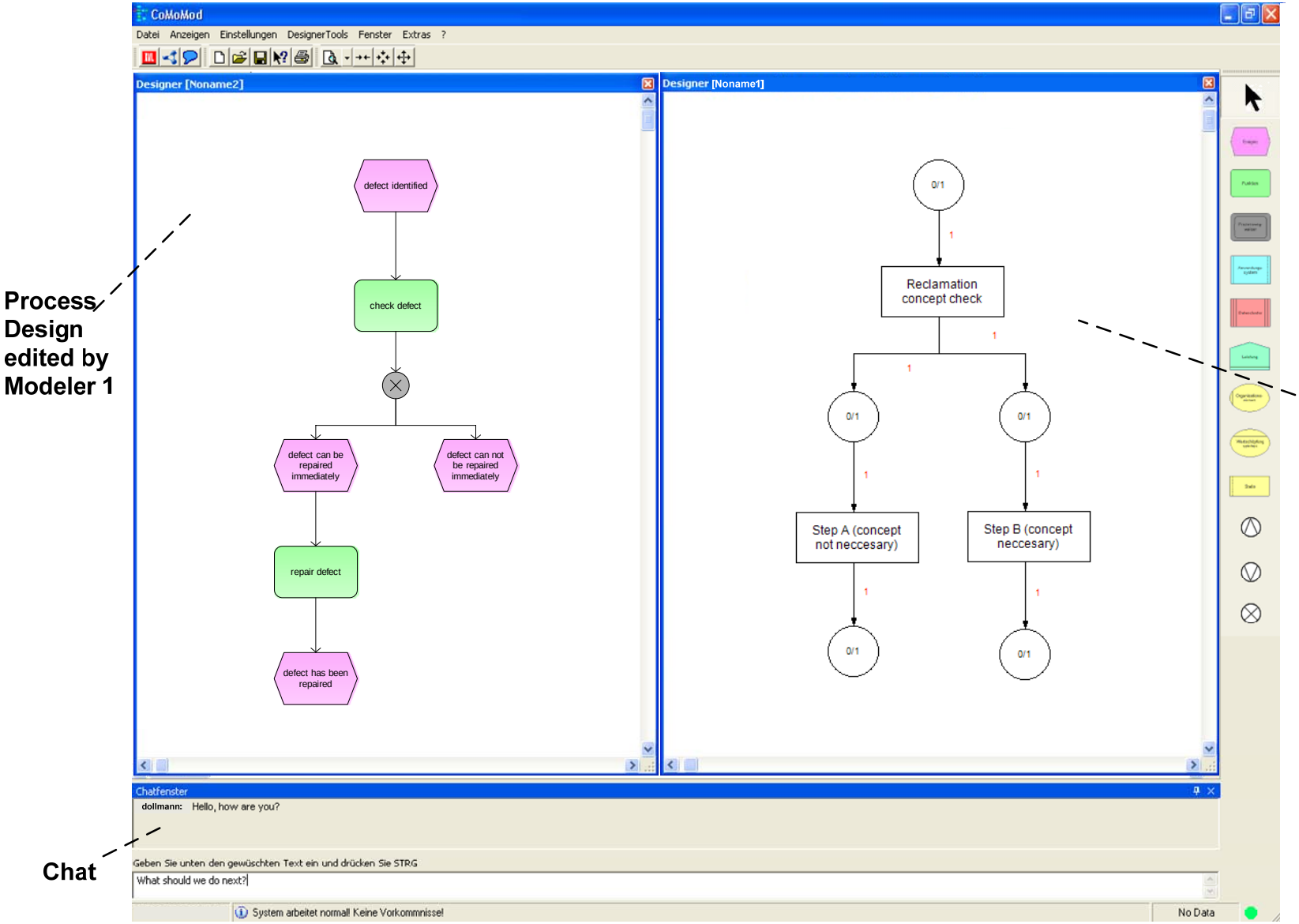
3. The CoMoMod-Tool

3.3 The CoMoMod-Tool and its utilization for collaborative modeling

- CoMoMod supports the procedure model
- CoMoMod instances run on each modelers computer
- Data is exchanged via peer-to-peer connections and saved on each CoMoMod instance
- Proof of concept supports EPC and Petri Nets



3. The CoMoMod-Tool



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4. Discussion

- CoMoMod supports a cooperative design of processes and a shared understanding
- Semi-automated model transformation
- Peer-to-peer-based system architecture improves the security of sensitive process information
- Limitations:
  - Research prototype
  - So far only EPCs and Petri Nets
  - Further investigation of practical usage needed (effects, side-effects etc.)

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5. Summary and Future Work

- CoMoMod implements the procedure model for collaborative modeling
- Possibility of using different modeling languages → transformation
- Support of a “standardized” vocabulary
- Future work:
  - Extension of modeling language support (BPMN, UML activity diagrams etc.)
  - Investigation of potential of implementing CoMoMod as a BPM web service (*BPM-as-a-Service*)
  - Extension of the tool support for further phases of the BPM life cycle, like inter-organizational process controlling
  - Investigation of potential for the modeling of more sustainable inter-organizational business processes (*Green BPM*)

Thank you for your attention!

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