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Open
COLlaboration for
POLicy MOdelling



Supporting stakeholder participation in public policy development: The OCOPOMO approach

Prof. Dr. Maria A. Wimmer
wimmer@uni-koblenz.de
(Project coordinator)



UNIVERSITÄT
KOBLENZ · LANDAU

**ePolicy technical meeting,
Bologna 6th and 7th of February 2012**

Agenda



- ❖ OCOPOMO and its method to engage stakeholders in policy development
- ❖ Scenario building, analysis, conceptual modelling and transformation support towards formal policy models
- ❖ Innovation

Challenges in Policy Development



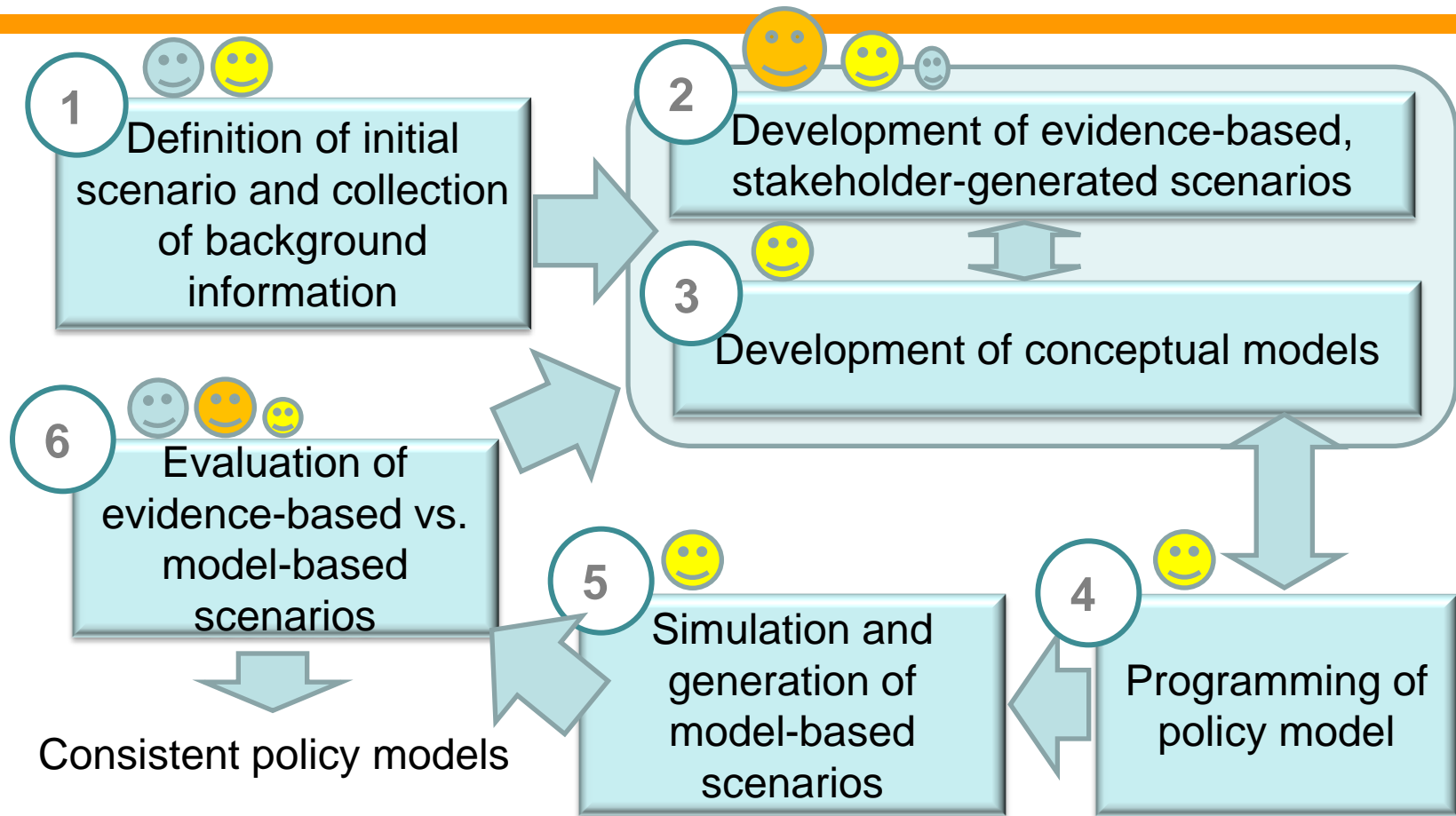
- ❖ Appropriate ICT support in policy planning not deployed widely
- ❖ Management of complexity in strategy and policy formation
- ❖ Development, visualisation and simulation of appropriate policy models usually done by experts
 - black-box approach
- ❖ Lack of open collaboration and therewith transparency in identifying the crucial features of complex social environments to inform policy models
- ❖ Online participation means not yet deployed widely in strategic decision making

Aims of OCOPOMO Project



- ❖ Support key stakeholders to participate in the processes of policy formulation
 - Policy analysts, policy operators, wider stakeholder groups of specific policy domains
- ❖ Integrate methods and tools of scenario-based policy formation with formal policy modelling
- ❖ Develop an integrated ICT platform for efficient policy making
 - Mechanisms of open collaboration along the policy process
 - Supporting engagement of wide stakeholder groups

OCOPOMO's Integrated Policy Process and Involved Actors



Legend: # Process phase

→ Transition to next phase

Actors: Domain Experts (Policy Planner / Strategic Decision Maker)

Stakeholders involved

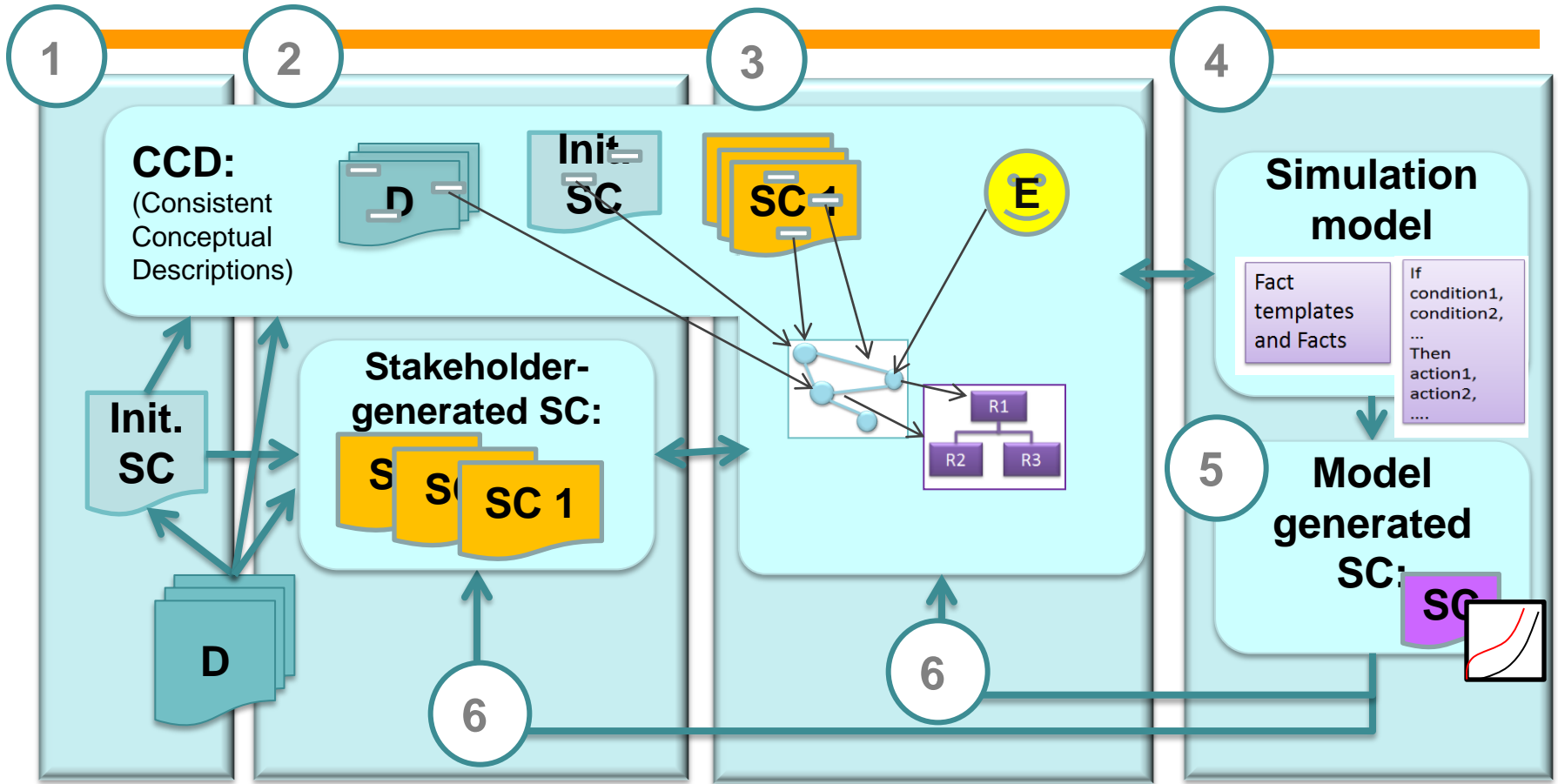
Experts for Policy Analysis / Policy Modelling

Integrating Scenario and Formal Model



- ❖ Goals, scope and social processes specified by participating stakeholders
- ❖ Stakeholder-generated scenarios inform formal policy model design
- ❖ Models produce simulations, which result in model-based scenarios
- ❖ Participating stakeholders evaluate model generated scenarios
 - Surprises involve further investigation of model & scenarios
 - Iterations in developing formal policy models

Artefacts along the Process Phases



Legend:



Process phase



Information flow



Information flow detailed steps



Expert knowledge



Documents



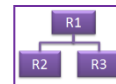
Scenarios



Relevant aspect



Network of social relationships



Rule-Dependency-Graph

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- ❖ Scenarios as textual descriptions of a perceived view or understanding of a topic under discussion
 - Cover existing world status or mental model of stakeholders
- ❖ Alternative scenarios for different aspects and /or alternatives
- ❖ Different sets of scenarios from different stakeholder groups
 - Scenarios may be conflicting among stakeholder groups
- ❖ Extending existing scenarios as understanding and viewpoints grow

❖ Consistent

- Make modelling decisions traceable for stakeholders.
- Text phrases from source scenarios and background texts are linked with conceptual descriptions.
- Semi-automatic transformation of a CCD into imperative and declarative programming code allows that simulation results can be linked with original text phrases.

❖ Conceptual

- provide a conceptual model of a policy case i.e. conceptualising actors, policies, believes, aims etc. and their relations
 - relevant in a policy case and
 - described in scenarios and background information.
- Concepts are further transferred into concrete programming code elements using a Model Driven Development (MDD) approach

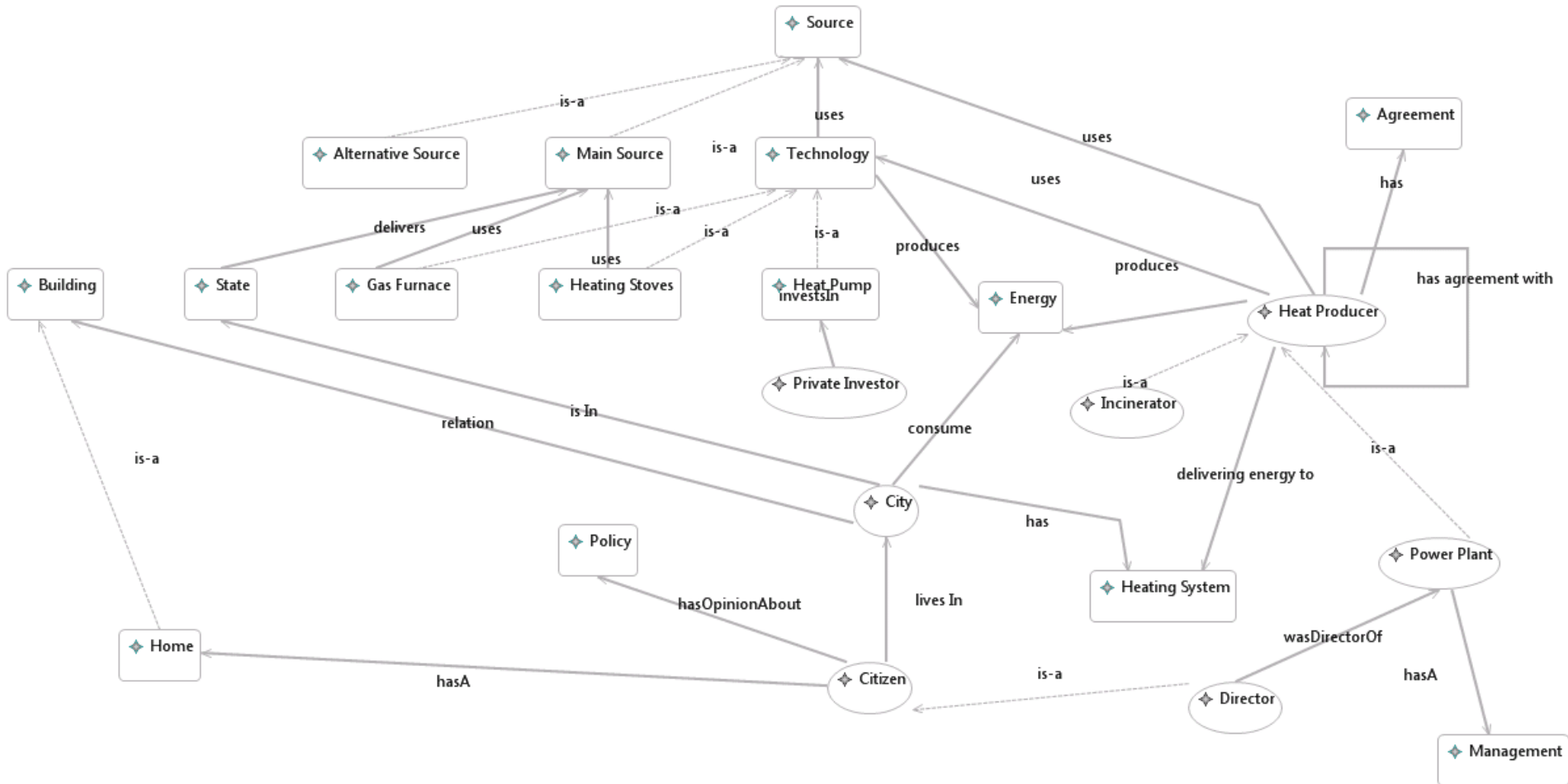
- ❖ Description (based on Wimmer et al., 2012):
 - CCD plays a role as intermediary between scenarios and simulation models
 - Several scenarios can form input to the CCD of a policy domain and further lead to a formal simulation model
 - Expertise of policy analysts may lead to particular knowledge constructs in the CCD
 - Visualising particular knowledge gaps in the existing scenario descriptions
 - CCD content may be revised or enriched based on input from analysing simulation models

CCD Tool – Annotation of Scenarios

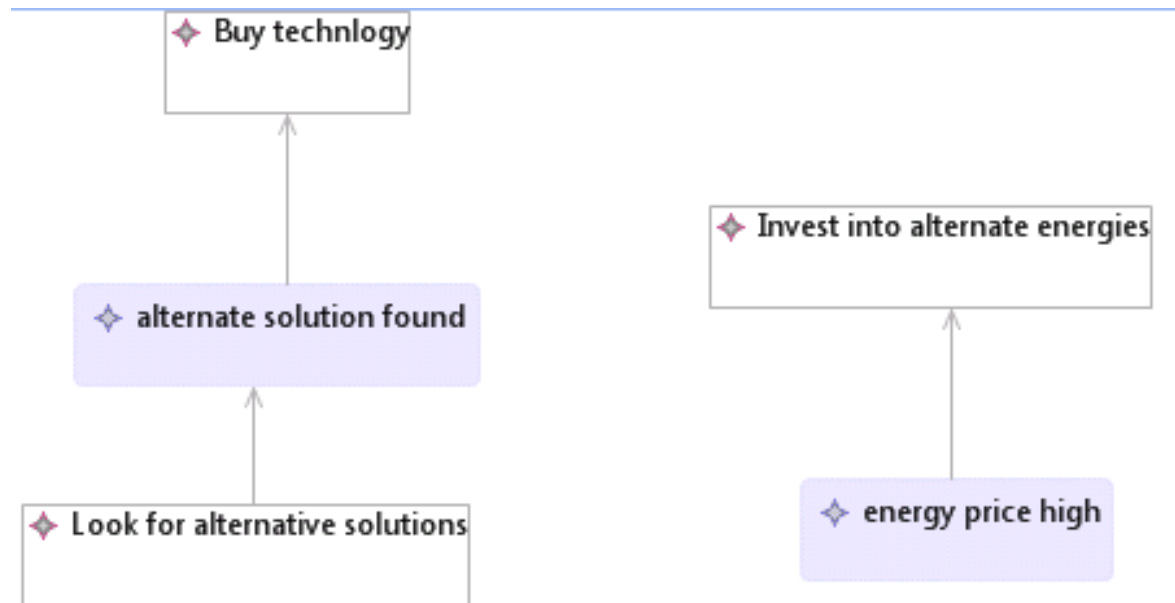
The screenshot displays the CCD Tool interface. The main window shows a text document with various annotations. A pop-up box is visible over the text, displaying 'Actor (name: Heat Producer, description: null)'. On the right side, there is a 'CCD Annotation View' tree structure. The tree is organized as follows:

- CCD
 - Actors
 - Heat Producer
 - File Annotation heat producer
 - Relation: Heat Producer produces E
 - Relation: Heat Producer uses Sourc
 - Relation: Heat Producer isIn
 - Relation: Heat Producer uses Techn
 - Relation: Heat Producer covering
 - Relation: Heat Producer hasAgreen
 - Relation: Heat Producer deliveringE
 - Relation: Heat Producer has Agree
 - Relation: Heat Producer coveringDe
 - Relation: Heat Producer capacity In
 - Relation: Heat Producer actualCO2
 - Relation: Heat Producer sellingPrice
 - Power Plant
 - Incinerator
 - Citizen
 - Actor: Private Investor
 - Actor: City
 - Objects
 - Actions
 - ActionInputOutputs
 - Enums
 - Variables
 - Annotations

CCD Tool – Visualisation Ontology



CCD Tool – Visualisation of Actions



Web Content Management System (Alfresco)

[Scenario generation, stakeholder collaboration, document management, user management]



Consistent Conceptual Description Tool (CCD Tool)

[Annotation of scenarios and background documents, Conceptual model of policy domain, Transformation to simulation environment]



Declarative Rule-based Agent Modelling Software (DRAMS)

[Programming of simulation model with agents, fact bases, rules, executable simulation models]



Three policy cases in OCOPOMO



- ❖ Renewable energy in Kosice Self-governing Region
- ❖ Competence centres for knowledge transfer in Campania Region
- ❖ Housing facilities in London

Status of development



- ❖ ICT Tools implemented
- ❖ Initial scenarios, CCD draft models, DRAMS simulation prototype models developed

- ❖ Piloting with Kosice and Campania
 - Engaging stakeholders of the cases in scenario generation and discussion

- ❖ Next steps
 - Evaluation of tools and models developed
 - Improvement of tools and processes
 - Second iteration

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- ❖ OCOPOMO policy development process: integrated approach from narrative scenarios to formal policy models
 - Iterative process of identifying the parameters and features informing formal policy models
- ❖ Consistent conceptual description (CCD): Incorporating traceability in the iterative policy development process
- ❖ Open collaboration in policy development through integrated web 2.0 based e-participation toolbox
 - Enabling policy analysts, policy operators and wider stakeholder groups to work together collaboratively

Expected impact



- ❖ Contribution to strategic policies and to implement open government
- ❖ Contribution to transform government and administration to an open, effective and efficient participative governance (good governance principles)
- ❖ Provide new opportunities for open discourse among stakeholders of the policy domain and the policy experts
 - in stakeholder-oriented scenario generation
 - in evaluation of formal policy models
- ❖ Improve transparency and traceability in strategic decision making by involving different stakeholders in the participative process via the open collaboration platform



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Many thanks for your attention!

wimmer@uni-koblenz.de

Project partners:



KSR



REGIONE CAMPANIA