ICEGOV 2011 TALLINN ESTONIA

5TH INTERNATIONAL CONFERENCE ON THEORY AND PRACTICE OF ELECTRONIC GOVERNANCE

26 - 28 SEPTEMBER 2011

WWW.ICEGOV.ORG

Tutorial:
Electronic Governance for Sustainable Development (EGOV4SD)
Example of collaborative Policy Development

Tomasz Janowski
tj@iist.unu.edu

Maria A. Wimmer
wimmer@uni-koblenz.de

UNITED NATIONS UNIVERSITY
UNU-IIST
International Institute for Software Technology

CENTER FOR ELECTRONIC GOVERNANCE

UNIVERSITÄT KOBLENZ · LANDAU

Agenda

- Towards open government in policy making
- The OCOPOMO project
- New initiative: eGovPoliNet – The Policy Community

© Tomasz Janowski and Maria A. Wimmer

Dealing with Complexity and Dynamics in a Global Society

ICEGOV 2011 TALLINN ESTONIA

- Today's global challenges are interconnected, dynamic and complex in nature
- Policies to address these challenges having strong impact on the well-being of societies and economies
- Dealing with complexity a key success factor for good governance in the 21st century
- Policy makers must be able to cope with unwanted side effects from environmental changes and dynamics
- Constituency / Citizenship no more just accepting what politicians decide

© Tomasz Janowski and Maria A. Wimmer

Good Governance Principles as Starting Point

- Good governance principles
  - refer to approaches and guidelines for good governance and public administration to promote interaction and formation of political will with regard to societal and technological changes
- Five principles for good governance set by the EC
  - Openness
  - Participation
  - Accountability
  - Effectiveness
  - Coherence

http://eur-lex.europa.eu/LexUriServ/site/en/com/2001/com2001_0428en01.pdf

© Tomasz Janowski and Maria A. Wimmer

Open Government Principles of OECD

- Accountability
  - it is possible to identify and hold public officials to account for their actions
- Transparency
  - reliable, relevant and timely information about the activities of government is available to the public
- Openness
  - governments listen to citizens and businesses and take their suggestions into account when designing and implementing public policies

Open Government: Fostering Dialogue with Civil Society. OECD Study, 2003

© Tomasz Janowski and Maria A. Wimmer

Towards Open and Inclusive Policy Making

ICEGOV 2011 TALLINN ESTONIA

- Demand for integration of e-government, e-participation and e-governance
- OECD study states:

  "*open and inclusive policy making offers one way to improve policy performance and meet citizens rising expectations. Public engagement in the design and delivery of public policy and services can help governments better understand people's needs, leverage a wider pool of information and resources, improve compliance, constrain costs and reduce the risk of conflict and delays downstream*"

  "Focus on Citizens: Public Engagement for Better Policy and Services"
  OECD Studies on Public Engagement, OECD Publishing, 2009

© Tomasz Janowski and Maria A. Wimmer

Open and Inclusive Policy Making

- Enhances transparency and accountability, public participation and builds civic capacity
- Offers a way for governments to improve their policy performance
  - by working with citizens, civil society organisations, businesses and other stakeholders
  - to deliver concrete improvements in policy outcomes and quality of public services

"Focus on Citizens: Public Engagement for Better Policy and Services"
OECD Studies on Public Engagement, OECD Publishing, 2009

© Tomasz Janowski and Maria A. Wimmer

What is a “public policy”?

Some example …

Public Engagement: Conditio-sine-qua-non for Effective Public Governance

- The government stake
  - Cannot alone deal with complex global and domestic challenges, such as climate change
  - Face hard trade-offs, such as responding to rising demands for better quality of public services despite tight budgets
  - Need to work with their citizens and other stakeholders to find solutions
- The citizen stake
  - More educated, well-informed and less deferential citizens judge their governments on “democratic performance” and “policy performance”

© Tomasz Janowski and Maria A. Wimmer

ICEGOV 2011 TALLINN ESTONIA

5TH INTERNATIONAL CONFERENCE ON THEORY AND PRACTICE OF ELECTRONIC GOVERNANCE

26 - 28 SEPTEMBER 2011

WWW.ICEGOV.ORG

What current challenges in collaborative policy development do you see?

Agenda

- Towards open government in policy making
- The OCOPOMO project
- New initiative: eGovPoliNet – The Policy Community

© Tomasz Janowski and Maria A. Wimmer

Current Challenges in Policy Making

- 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

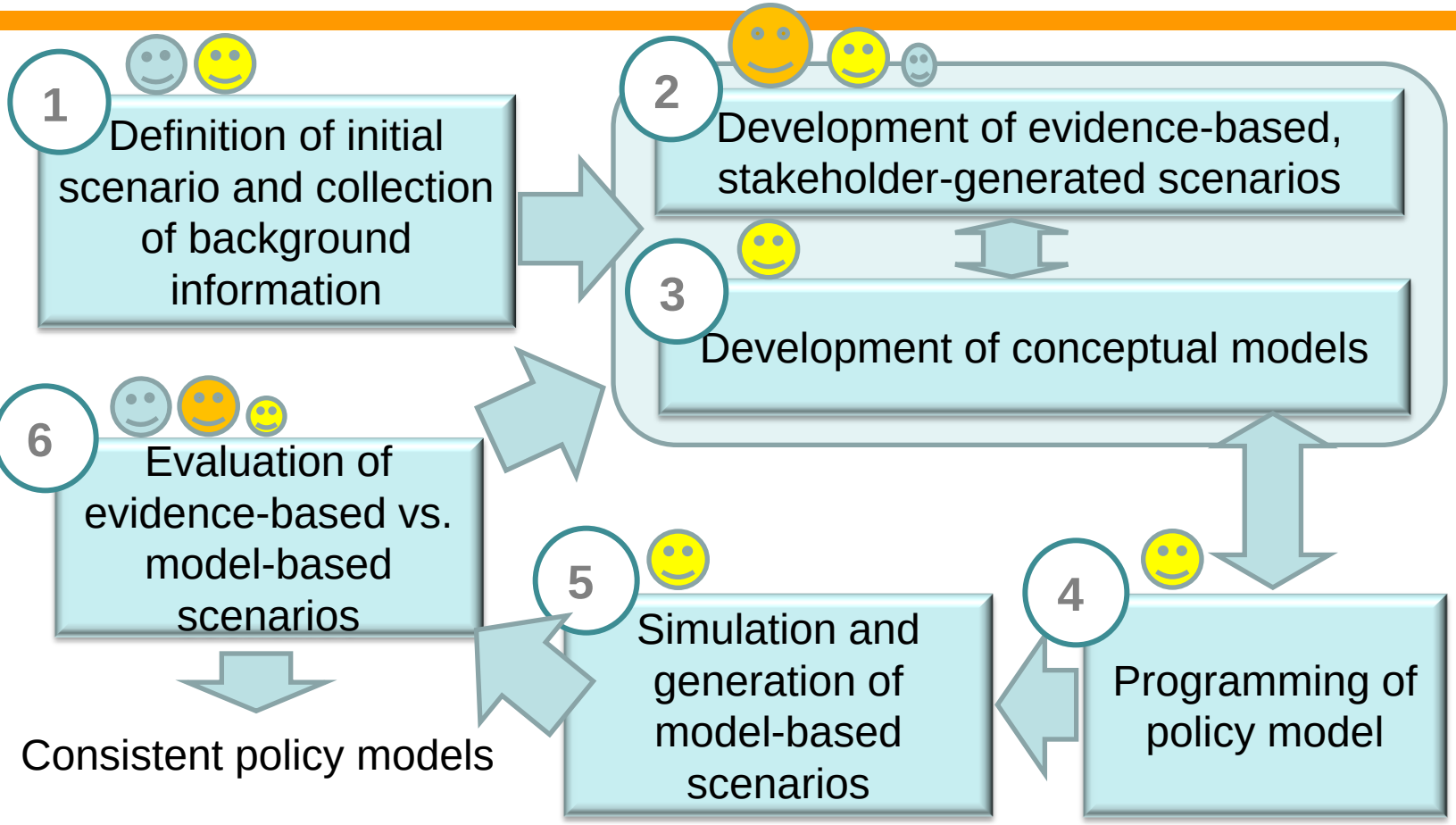
© OCOPOMO consortium, www.ocopomo.eu
SEVENTH FRAMEWORK PROGRAMME

Aims of the 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 consortium, www.ocopomo.eu

OCOPOMO's Integrated Policy Process and Involved Actors



Legend:

Prodess phase

Transition to next phase

Actors:

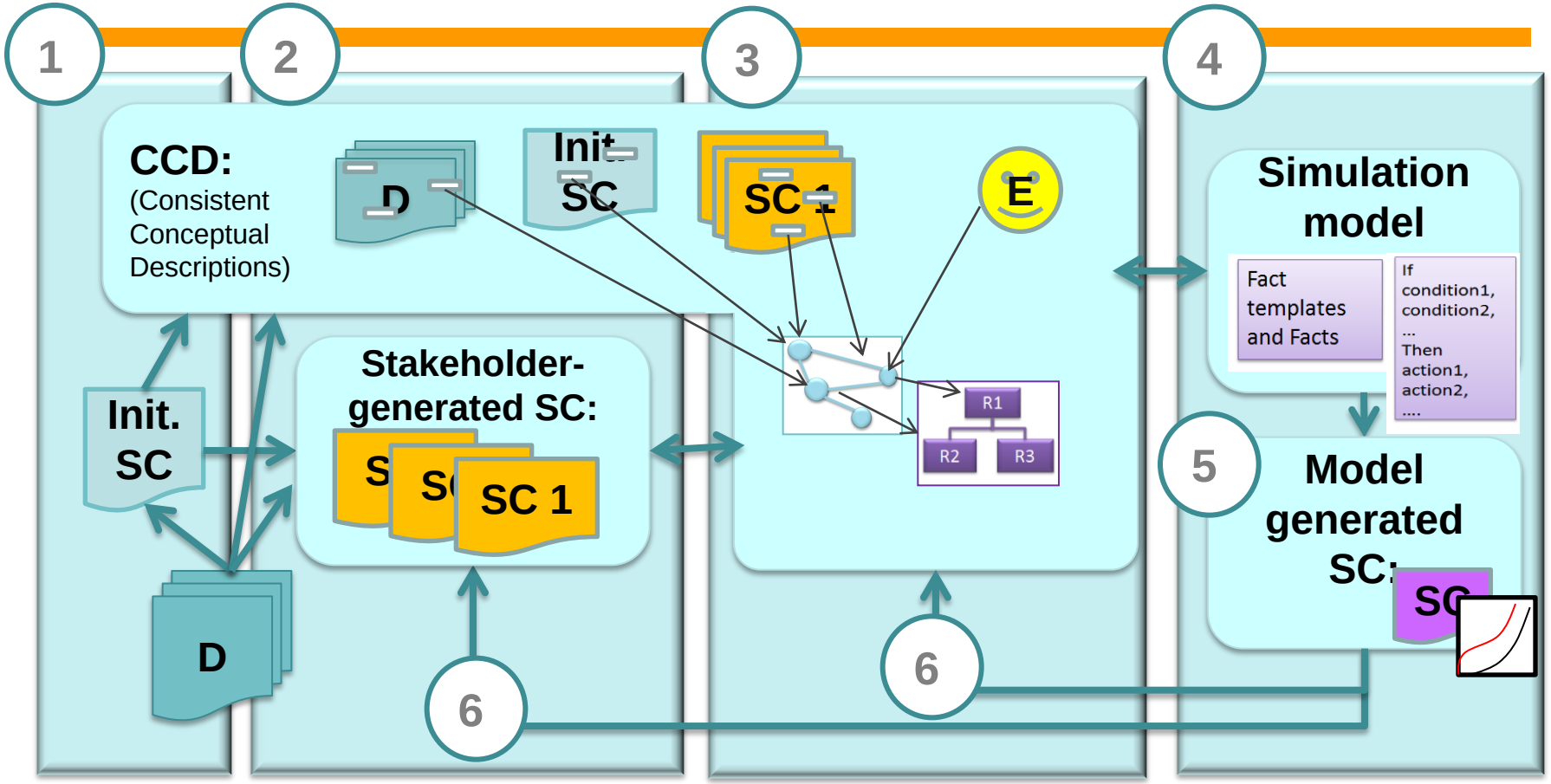
Domain Experts (Policy Planner / Strategic Decision Maker)

Stakeholders involved

Experts for Policy Analysis / Policy Modelling

SEVENTH FRAMEWORK PROGRAMME

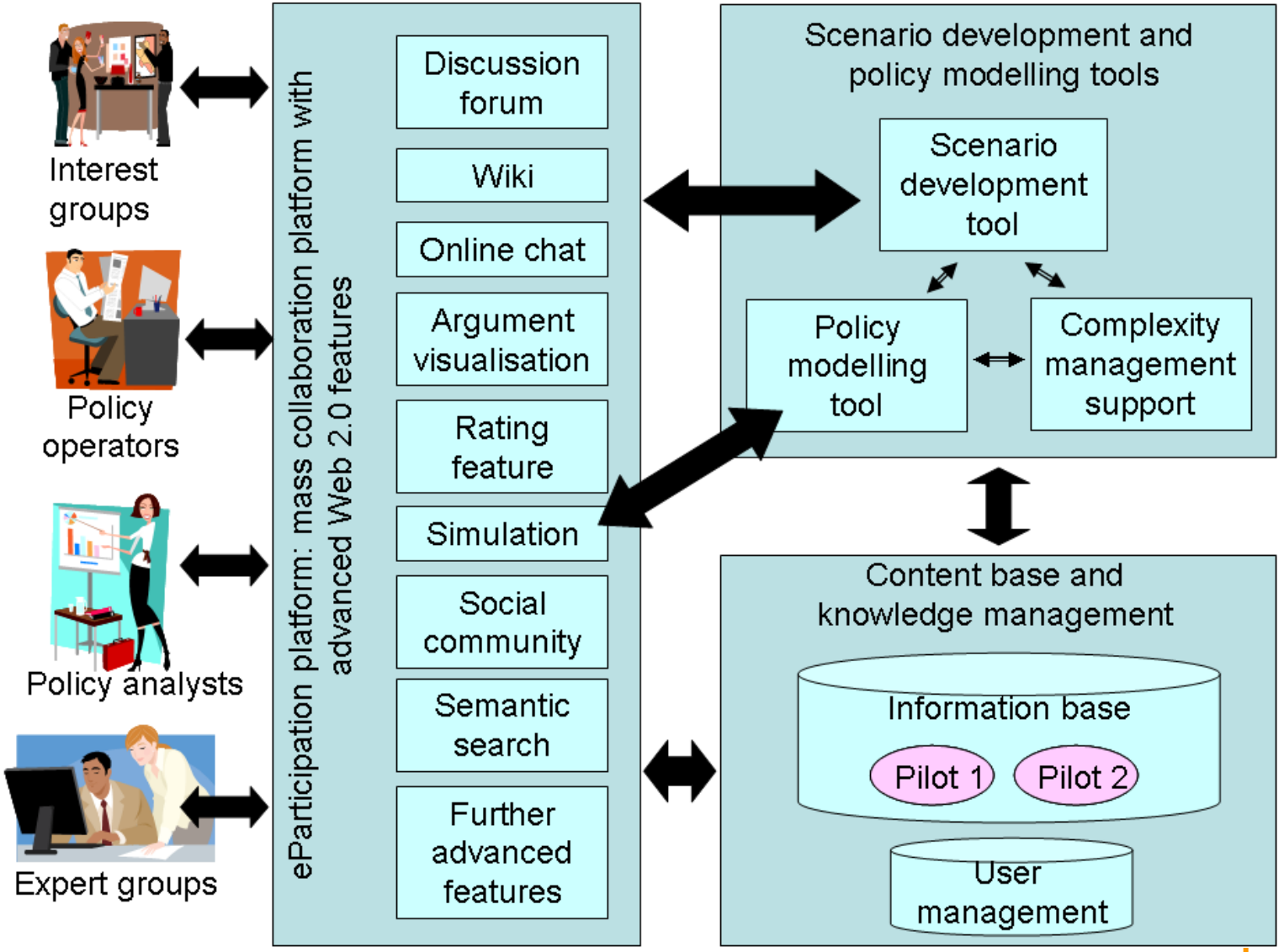
Artefacts along the Process Phases



Legend:

- # Process phase
- Information flow
- Information flow detailed steps
- E Expert knowledge
- D Documents
- SC Scenarios
- Relevant aspect
- Network of social relationships
- R1 R2 R3 Rule-Dependency-Graph

ICT Toolbox Aimed at



Integrating Scenario and Formal Model

- Goals, scope and social processes specified by participating stakeholders
- Stakeholder-generated scenarios inform model design
  - Key in model design is a set of if-then rules
  - Stakeholders see natural-language pseudo code
  - Enforces precision in use of language, expectations, goals
- Models produce simulations which are formal scenarios
- Participating stakeholders evaluate model generated scenarios
  - Surprises involve further investigation of model and scenarios
  - Iterations in developing formal policy models

© OCOPOMO consortium, www.ocopomo.eu
SEVENTH FRAMEWORK PROGRAMME

Two Different Kinds of Scenarios

- Evidence-based stakeholder-generated scenarios
  - will inform simulation models to run alternative policy choices, i.e. to show potential real effects of alternative conditions and courses of action
- Model-generated scenarios
  - results of the simulation run will generate scenarios to help better understand potential interferences or conflicts of positions of stakeholders, which help them to reflect their positions

© OCOPOMO consortium, www.ocopomo.eu
SEVENTH FRAMEWORK PROGRAMME

Complementarity of Scenario and Policy Models

- Chaining in OCOPOMO
  - Scenarios built with goal in mind (backward chaining)
  - Models built from behavioural and contextual evidence – using forward chaining rules
- Richness and precision
  - Scenarios developed using rich, natural language
  - Rulebases in models are precise, formal statements
- Exploitation and exploration
  - Scenario exercises natural to encourage exploration – ideas generation
  - Models facilitate exploitation and understanding of prevailing context

© OCOPOMO consortium, www.ocopomo.eu
SEVENTH FRAMEWORK PROGRAMME

What Is Scenario Building …

- Method for foresight according to Geschka (1978):

  "*systematic,*
  participatory,
  future intelligence gathering and
  medium-to-long-term vision building process
  aimed at present-day decisions and
  mobilising joint actions"

© OCOPOMO consortium, www.ocopomo.eu
SEVENTH FRAMEWORK PROGRAMME

WHAT IS A SCENARIO?

Some example …

© OCOPOMO consortium, www.ocopomo.eu

Collaborative Scenario Building in OCOPOMO

- Scenarios
  - Are textual description of a perceived view or understanding of a topic under discussion
  - Cover existing world status or mental model of stakeholders
- Alternative scenarios to describe different aspects and /or alternatives
- Different stakeholder groups develop different sets of scenarios independently
- Scenarios may be conflicting among stakeholder groups
- Scenarios may be extended and therewith advance an existing scenario (nesting scenarios)

© OCOPOMO consortium, www.ocopomo.eu
SEVENTH FRAMEWORK PROGRAMME

Scenario Extract of the Kosice Self-Governing Region

I am living with my wife and two children in a three room flat below the top of the house. The house, in which my flat is in, is not well insulated and, hence, has high consumption of energy for both electricity and heating. Since energy prices are increasing and the energy consumption in my house is very high, I am reflecting alternatives both to decrease consumption such as renovation and to switch the source of energy (if possible). Currently, I am recognising that energy consumption is too high and more and more becomes too expensive for me and my family. Hence, I want to reduce costs of energy consumption. For me who am living in a flat, the association of flat owners is responsible for energy issues, i.e. they have to perform energy audits by law. Citizens need to provide certificates on how efficient energy use is in the house (energy certificates and energy audits). I have to discuss with my family and neighbours. Together we can consult the association of flat owners for a plan to trigger renovation. The association of flat owners, then, calculates the impact of the renovation, the increased energy price and the reduced energy consumption for the future maintenance costs. Urban householders are obliged to create an association; rural houses are not. An association hires service company/building manager (on fee) who is responsible for dealing with heat and electricity providers. An association may refuse to cooperate with a service company and make arrangements with heat provider on its own. An association itself can be member of a higher association. An association of associations is a board of directors, which e.g. talks with regional or even national governments.

© OCOPOMO consortium, www.ocopomo.eu

Data Derived from Scenario (1/2)

Class of Stakeholders	Class of objects	Characteristics
→ Households - Flat owner - Flat mates - Neighbour → Association of flat owners → Service company → Government - Regional - National	→ House (Flats) → Heating system → Energy audits → Message - Demand - Provide energy certificate - Perform energy audit	→ House - Established in - Renovated in - Insulation - Electricity consumption - Heating consumption

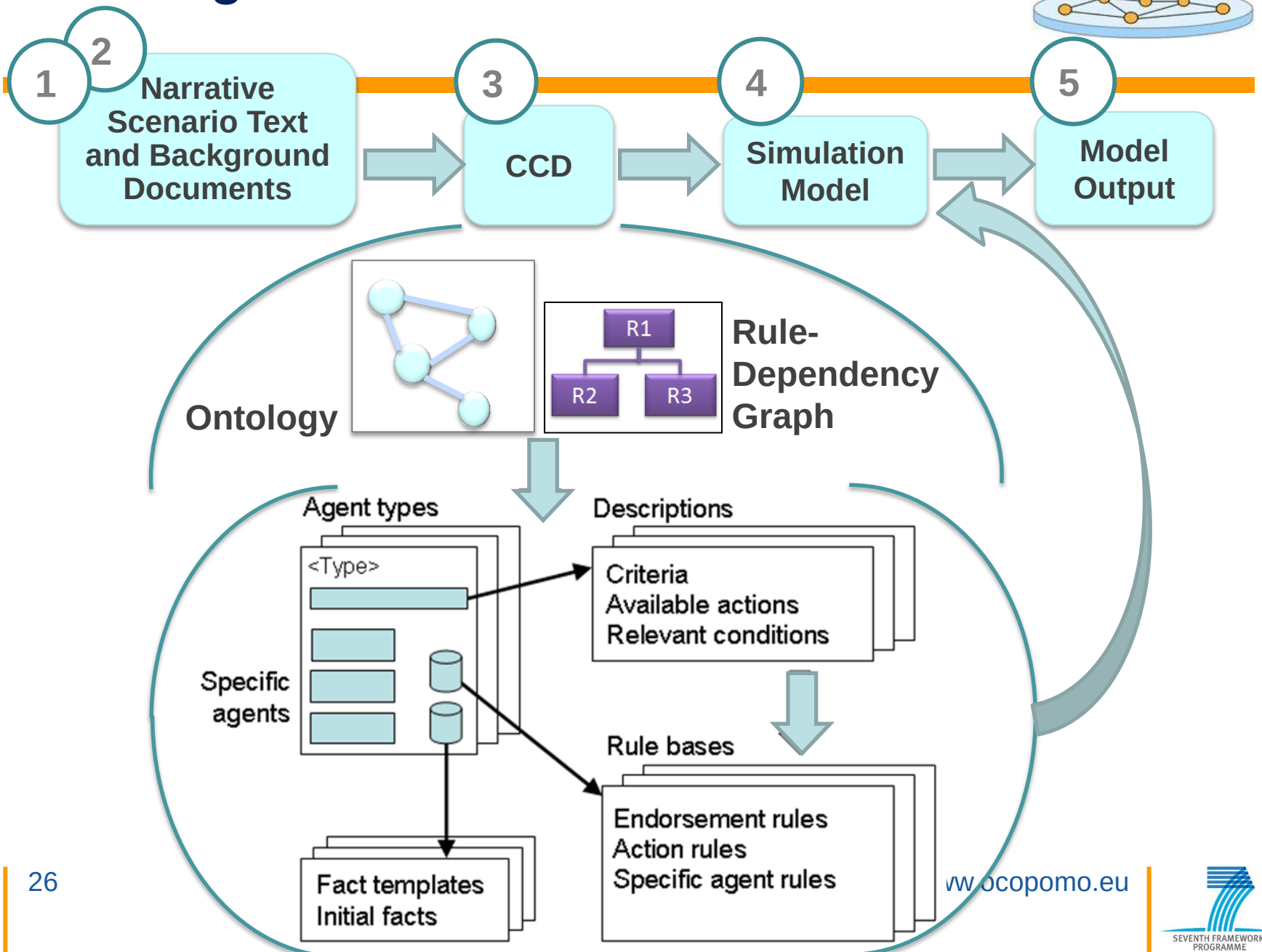
© OCOPOMO consortium, www.ocopomo.eu
SEVENTH FRAMEWORK PROGRAMME

Data Derived from Scenario (2/2)

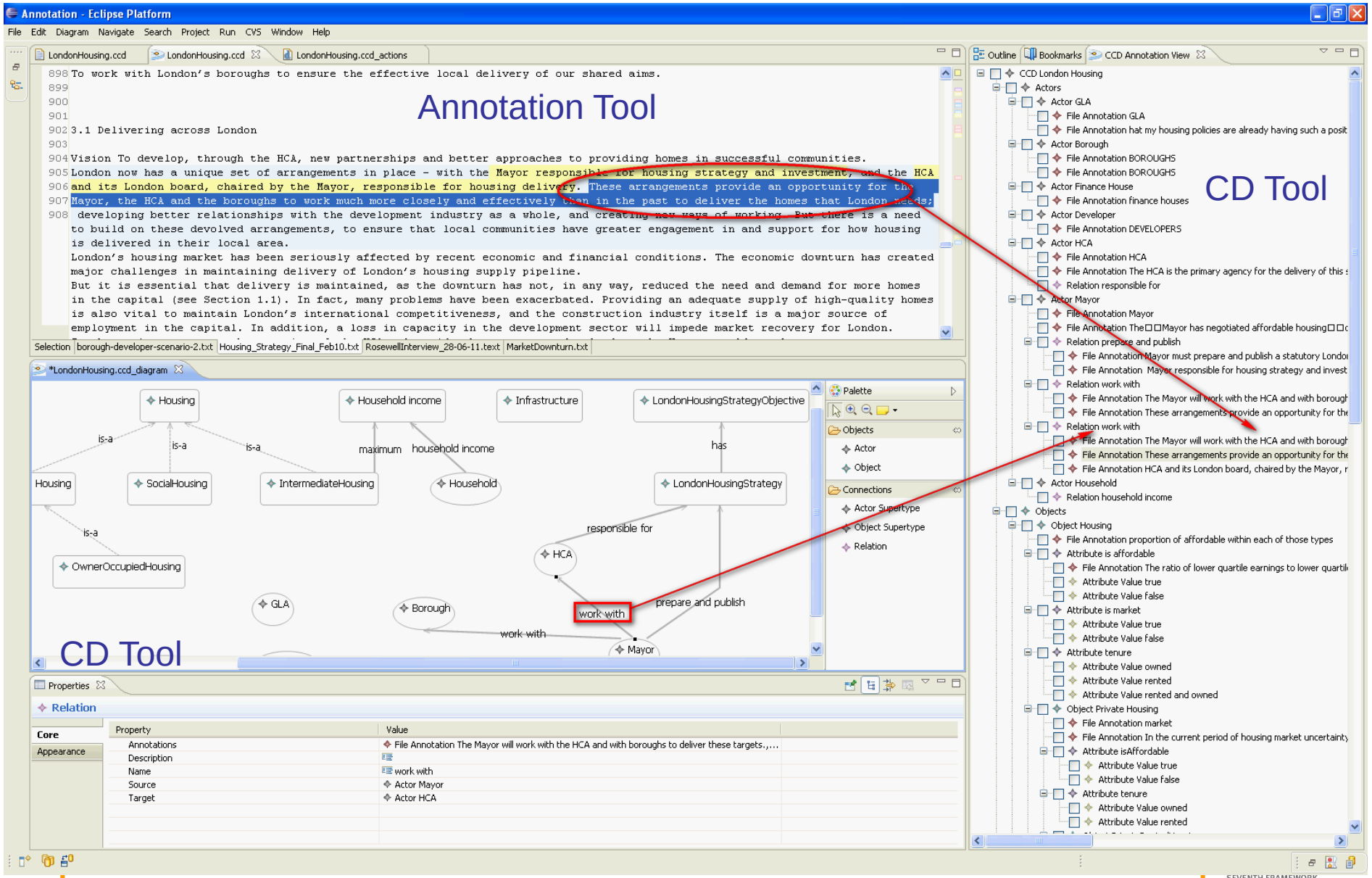
Actions:	Rules:	Relations:
→ Flat owner - recognising - reflecting alternatives - decreasing consumption - switching source of energy - reducing costs - discussing with - consulting - creating an association → Association of flat owners - trigger renovation - calculating impact - hiring service company - perform energy audits	→ IF energy prices are high AND energy consumption is very high THEN flat owners reflect alternatives to decrease consumption AND/OR to switch the source of energy. → IF renovation is needed AND support is asked for THEN energy audit AND certificate are needed	→ being responsible for → living in → sharing flat with → providing certificates to → belonging to

© OCOPOMO consortium, www.ocopomo.eu
SEVENTH FRAMEWORK PROGRAMME

Zooming into the CCD

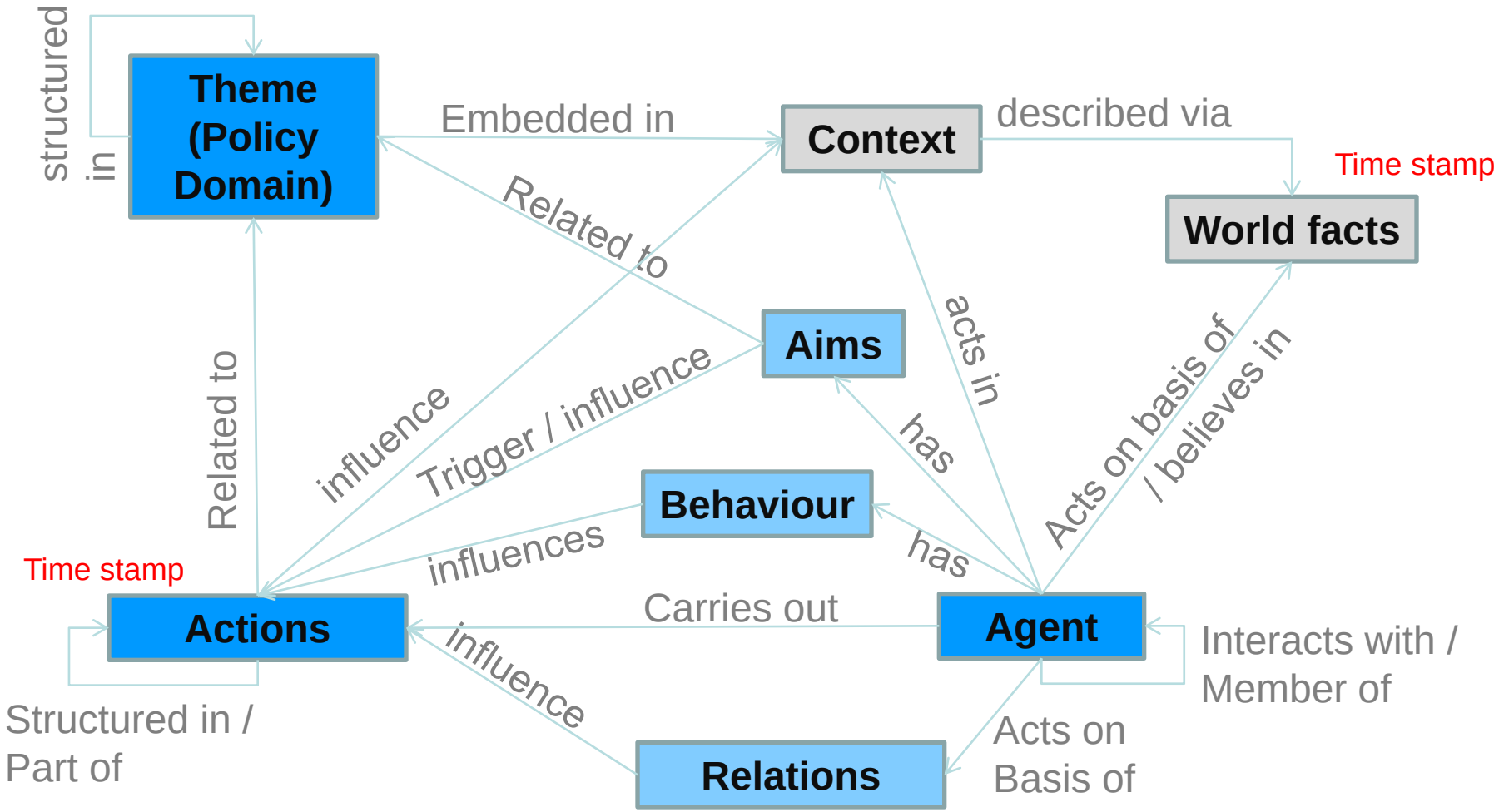


CCD Tool in Action



SEVENTH FRAMEWORK PROGRAMME

Conceptual Model for Policy Description in CCD and Formal Policy Model (Approximation)



© OCOPOMO consortium, www.ocopomo.eu

Step 1 of Transformation: Identification of Aspects of Relationships

Phrase in scenario description	Aspect (issue)	Category	Characteristics of aspects	Model component
... living … in a three room flat … house … is not well insulated … reflecting alternatives to decrease [energy] consumption … and to switch the source of energy [to renewable and green]	Energy consumption	State: Alternative or multivariate	If alternative: {"nuclear", "gas", "solar", "wind", "bio-mass", "hydro-thermic"} or if multivariate: <nuclear x_s per cent, gas x_f per cent, solar x_n per cent, wind x_w per cent, bio-mass x_b per cent, hydro-thermic x_h per cent>	Condition part of a rule in an agent's rulebase, fact
		Goal (description of desired future state)		Also a fact
	consume	State change (ways and means, measures to be taken)	Action description: *insulate house to reduce energy consumption switch to green energy provider*	Action part of a rule in an agent's rulebase, to be determined by analysing possible ways from current states to goals
	Household	Actor	Endowed with a rule base, a fact base and goals	Agent class

Step 2 of Transformation: Identification of Rules (Rule-dependency Graph)

Model structure	Model comp.	Name	Natural language description	Formal description (Code)
Agent "Household"	Structure	Household	Agent class	class household{...}
	Facts	Current state	Current consumption of energy per household	Class ConsumptionState { double InsulationClass; double soilCapacity; double priceOfSolarEnergy; double windCapacity; double priceOfWindEnergy; …}
			Current state of house insulation	
			Current price for heating energy per energy type	
		Desired state	Desired insulation of house	PlanningGoal [objective insulation] [objective minimumCost] [objective greenEnergy] [priority high]
			Desired consumption of energy in households	
			Maximum necessary import of gas from UA	
		Danger	House owner will not insulate house	Danger [cheese] [losses]
			Government will not subsidise investment in soilPlants on house	

Status Quo of Policy Modeling

- Economic policy models
  - Top-down and theory-driven
  - Statistical usually; Verhagen is “evolutionary”
- Environmental policy models
  - Many models – usually economic
  - Significant proportions of papers about policy modelling in social contexts (Yearley, van Daalen et al.)
  - Found no papers incorporating institutional evidence for a particular place, time or policy
- Evidence-driven – all agent-based and bottom-up
  - Relate to specific institutions and policies

© OCOPOMO consortium, www.ocopomo.eu
SEVENTH FRAMEWORK PROGRAMME

Policy Modelling in OCOPOMO

- Approach
  - Scenarios generated by stakeholders
    - Using integrated ICT-based participation platform
  - Model designs driven by information from scenarios
    - Stakeholder concerns and expectations
  - Interactive, parallel development of models and scenarios
- Type of model
  - Evidence-driven
  - Agent-based
- Role of modelling
  - Precision
  - Exploitation
  - Exploration

© OCOPOMO consortium, www.ocopomo.eu
SEVENTH FRAMEWORK PROGRAMME

Three cases of public policy

- Renewable energy policy in Kosice Self-governing Region
- Knowledge transfer in tourism and cultural industries in Campania Region of Italy
- Housing policy in London

© OCOPOMO consortium, www.ocopomo.eu
SEVENTH FRAMEWORK PROGRAMME

Innovations in OCOPOMO

- 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

© OCOPOMO consortium, www.ocopomo.eu

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

© OCOPOMO consortium, www.ocopomo.eu

Agenda

- Towards open government in policy making
- The OCOPOMO project
- New initiative: eGovPoliNet – The Policy Community

© OCOPOMO consortium, www.ocopomo.eu
SEVENTH FRAMEWORK PROGRAMME

ICT-2011.5.6 ICT solutions for Governance and Policy Modelling
FP7-ICT-2011 Coordination Action (CA) project
Grant agreement no.: 288136

www.policy-community.eu

eGovPoliNet: Building a global multidisciplinary digital governance and policy modelling research and practice community

Strategic backgrounds and status quo

- Significant societal transitions and drastic changes in economy, climate and demography currently affect societies and social behavior around the globe
- Longer-term transformation to be mastered and steered well ahead in time
- Several projects running
  - to respond to challenges and to bring forward solutions to
    - deploy innovative ICTs to support open governance
    - facilitate policy development through innovative ICT support
  - to foster disciplinary integration and multi-disciplinary problem solving

© eGovPoliNet consortium, www.policy-community.eu

Need for Integration and Joint Efforts

- Overcoming traditional fragmentation of research efforts through consolidation, community building, integration
- Researchers and practitioners to exchange and learn from each other in specific themes
- Establish respective communities spanning across the globe to discuss advancements and future challenges

eGovPoliNet will foster co-operation and coordination of research and practice to address issues that could not be solved alone

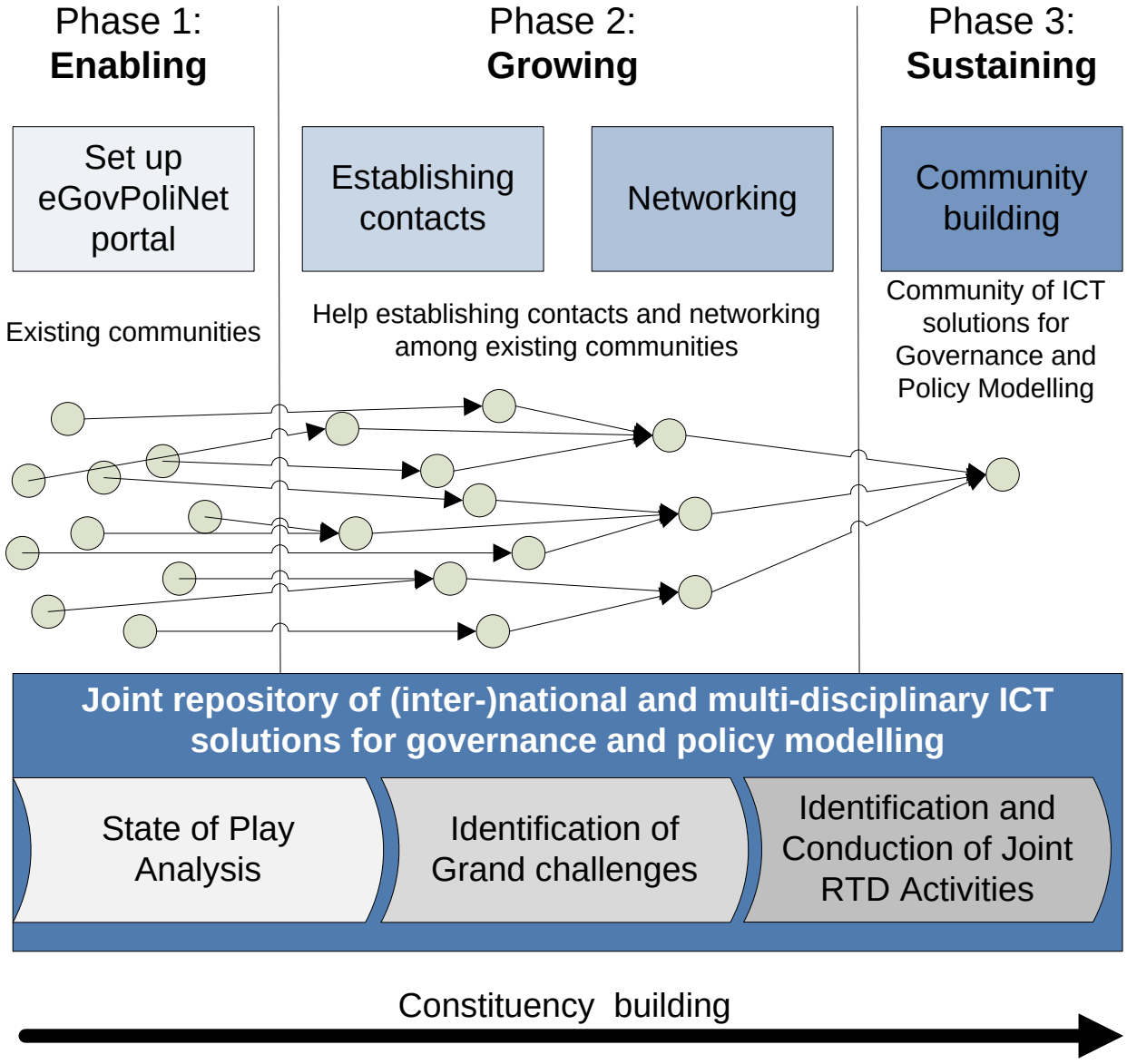
© eGovPoliNet consortium, www.policy-community.eu

Overarching objective of eGovPoliNet

- Strengthen scientific, technological and social research and practice excellence in digital public governance and policy modelling by
  - integrating the research and practice capacities of individuals and organisations spread across Europe and worldwide
  - including lessons and innovative approaches of the existing projects and future projects

© eGovPoliNet consortium, www.policy-community.eu

Concept of eGovPoliNet for an evolving international community building



Expected achievements

- Establishment of a network
  - Regular interaction via online and offline international and multi-disciplinary constituency building events
- Set-up and growing of community knowledge portal
- Studies and comparative analyses of cases and the field
  - Identifying research, practice and development projects
  - Identifying good-practice examples concerning modelling and simulating
  - Investigating and visualising social behaviour for better understanding

© eGovPoliNet consortium, www.policy-community.eu

Join the Network

- Significant challenges for governance to face in future
- Joint efforts to achieve substantial contributions to advance the field and to improve economic growth and social welfare
- Governance and policy making demand
  - appropriate support through governance and policy models, process flows and analytical tools
  - appropriate tools ensuring reliability and validity
  - proper understanding, interpretation, visualisation and harnessing of collaborative online tools

© eGovPoliNet consortium, www.policy-community.eu

Building a global multidisciplinary digital governance and policy modeling research and practice community

www.policy-community.eu

ARE YOU INVOLVED IN POLICY DEVELOPMENT PROJECTS?

Share your public policy cases with us …

Building a global multidisciplinary digital governance and policy modeling research and practice community

www.policy-community.eu

SEVENTH FRAMEWORK PROGRAMME

JOIN the Network!!!

URL: http://www.policy-community.eu/

LinkedIn

http://www.linkedin.com/groups?about=&gid=4076798

ICEGOV 2011 TALLINN ESTONIA

5TH INTERNATIONAL CONFERENCE ON THEORY AND PRACTICE OF ELECTRONIC GOVERNANCE

26 - 28 SEPTEMBER 2011

WWW.ICEGOV.ORG

Many thanks for your attention!

Tomasz Janowski and Maria A. Wimmer

tj@iist.unu.edu | *wimmer@uni-koblenz.de*

OCOPOMO

Open COllaboration for POlicy MOdelling

www.ocopomo.org

eGovPoliNet

The Policy Community