

Online Platform for Conducting Responsible Research and Innovations

Mohamad Ajami*, Louisa Grabner*, Giovanni Giambene[†], Van Le[†], Doanh Luong[†] and John Pearson[†]

(*) Automation Technology Fraunhofer-Institute for Production Systems and Design Technology (IPK), Germany
 (†) Department of Information Engineering and Mathematical Sciences University of Siena, Italy
 (†) Faculty of Computer Science University of Namur, Belgium

<http://observatory-rrri.info/>

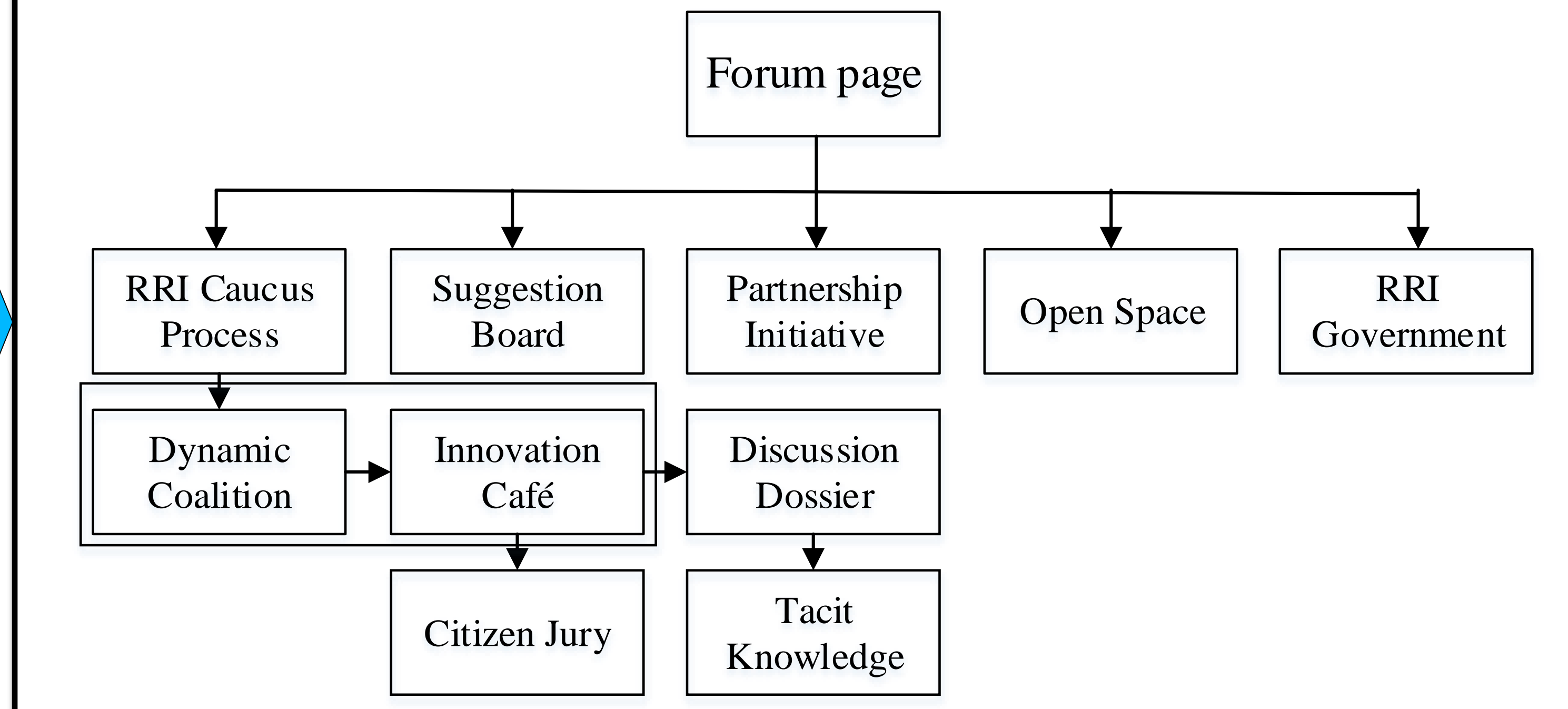


Objective

This work was carried out as part of EU FP7 Responsibility Project to implement an online platform for Responsible Research and Innovation (RRI), which provides anticipatory and deliberative tools to address societal expectations with regard to research and innovation and mobilises information technology tools for inclusive, responsive and sustainable research. In particular, we have developed a Forum, which is a Web-based application and service for stakeholders to deliberate and discuss about RRI.

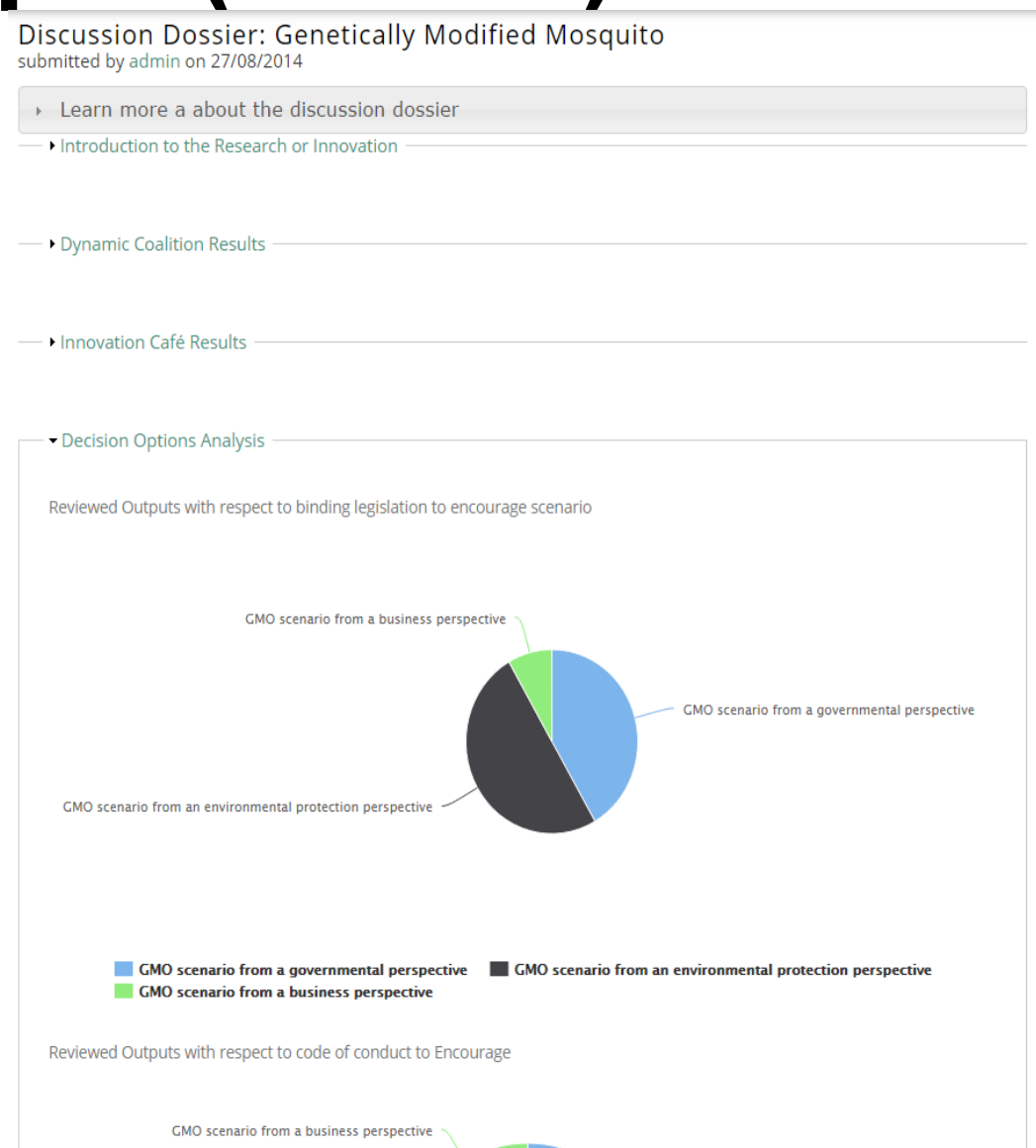
Different interaction modalities are supported by the Forum, such as: Caucus Process, Suggestion Board, Partnership Initiative, etc. A special attention is devoted to the Citizen Jury and Tacit Knowledge modules that represent some innovative features of our Forum. The outcomes show that our online Forum represents an effective solution to address RRI issues by adopting e-Government and knowledge management approaches.

Forum Architecture



Example (cont'd)

- After the preparation phase (DC) is finished, Innovation Café (IC) is started.
- Participants of an IC read introduction and scenarios in steps 1-3, and prepare a pre-discussion statement.
- Participants interact to have the final decision on the topic.
- The IC moderator generates a discussion dossier to store input and output.



Example of Caucus Process

In Dynamic Coalitions (DC), there are three steps as follows.

- Step 1:** Participants are asked to read the introduction of the topic (e.g., GMO) to have an overview of the problem.
- Step 2:** Participants prepare scenarios to be discussed.
- Step 3:** Participants wait for the approval of their scenario.

| Title | Author | Type of document | Uploaded Document | Approval Status |
|---|--------|------------------|--|-----------------|
| GMO scenario from a governmental perspective | mhahne | Scenarios | Scenario 2 Governmental Perspective.docx | approved |
| GMO scenario from an environmental protection perspective | mhahne | Scenarios | Scenario 3 Environment Protection Perspective.docx | approved |
| GMO scenario from a business perspective | mhahne | Scenarios | Scenario 1 Business perspective.docx | approved |

RRI Caucus Process

- RRI caucus process allows that a wide range of stakeholders can discuss about RRI issues. The discussion is started with the preparation of documents in Dynamic Coalitions (DC).
- Innovation Cafés are the places where all material prepared in the Dynamic Coalitions will be discussed and assessed by a broader audience of experts and stakeholders.
- In addition, a Citizen Jury is adopted to fine tune the results of experts' discussion after the Innovation Café finishes. Finally, a Tacit Knowledge module is used to collect knowledge of experts participating in the discussion.

Tacit Knowledge Tool

Description of Tacit Knowledge Tool

- Tacit Knowledge (TK) relates to the non-organized knowledge residing in each individual. TK is personal and hard to formalize. It is the knowledge of which we are basically not conscious. There are several approaches to acquire TK from individuals and groups as explained in [1].

Tacit Knowledge Interview Introduction:
 Tacit Knowledge Interview is a further (virtual) meeting within the same Innovation Café needed to interview experts explicit their knowledge in relation to the topics of the discussion.

Related Innovation Cafe:
 Internet of Things and Internet of Body
Related IC and Discussion Dossier:
 Internet of Things and Internet of Body
Interviewer:
 doanhluong
Experts:
 mohajami
 vananhle
 Choose date:

| | September 2015 | October 2015 |
|----------------|----------------|--------------|
| | Wed. 30 | Thu. 1 |
| 2 participants | | |
| doanhluong | 10:00 CEST ✓ | 14:00 CEST ✓ |
| vananhle | 10:00 CEST ✗ | 14:00 CEST ✗ |
| Totals | 1 | 2 |

Upload Interview:
 test.txt

Ask The Experts Box

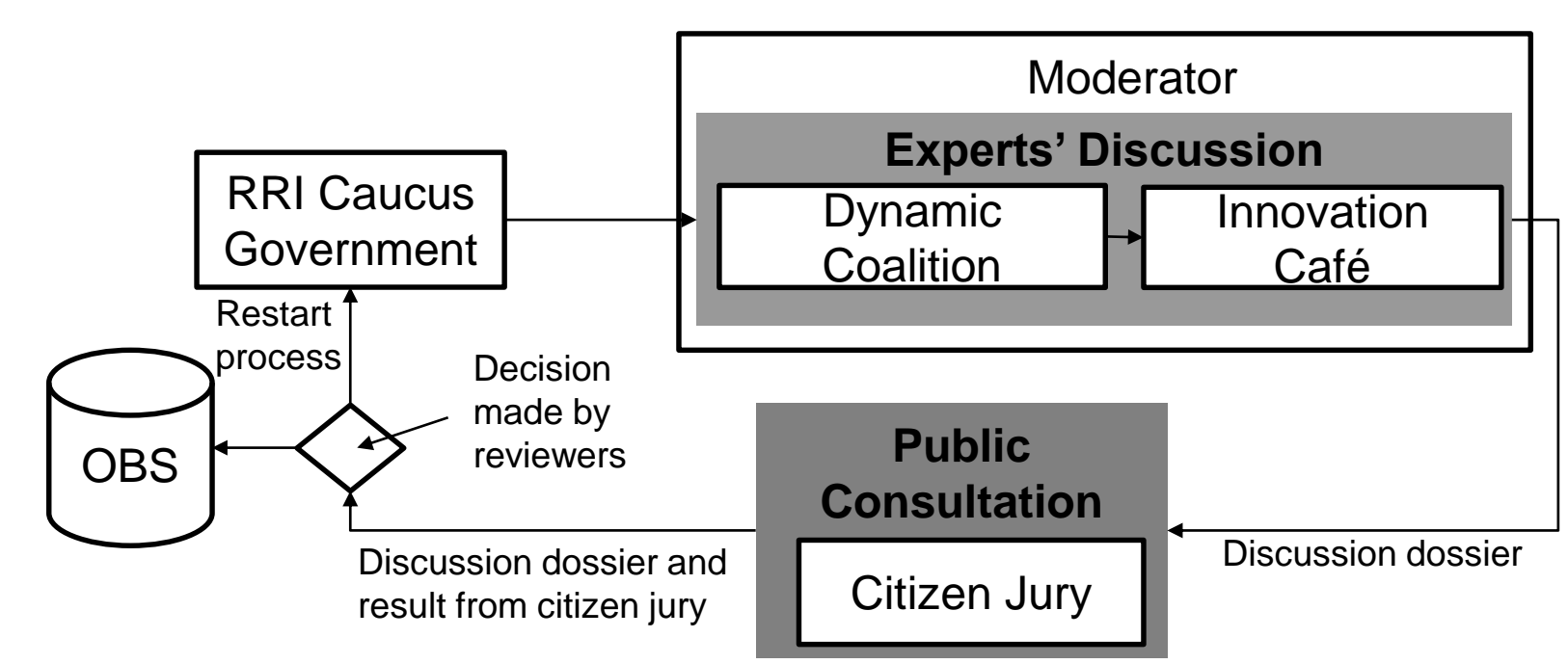
| Surname | Name | Affiliation | Expert Status | Domain/Field | |
|---------|-----------|---------------------|----------------------|---------------------------|------------------------|
| 3 | UNISI | University of Siena | Researcher | Food & Healthy Diet | |
| Le Anh | Van | University of Siena | PhD Student | ICT Research & Innovation | Ask expert (privately) |
| Luong | Doanh | University of Siena | PhD Student | | Ask expert (privately) |
| Eugene | Nicholson | University of Siena | Academic, Researcher | Security | |
| Uniso | Francesco | University of Siena | PhD Student | Education | |

[1] K. Dalkir, Knowledge Management in Theory and Practice, Elsevier Inc., Oxford, 2005.

Citizen Jury Module

Description of Citizen Jury Tool

- The purpose of the Citizen Jury module is to allow participants of an Innovation Café to vote on experts' discussion.
- For each decision, there will be a group of selected members (jurors), who are allowed to vote.



Implementation

- This module is implemented by using Rates, Views and Rules modules on Drupal 7 platform.
- Only the moderator of a discussion can create a new poll.
- After a new poll is created, each selected participant will receive an email notifying about his/her selection, including a link to the poll.
- Jurors can read discussion materials by going to the related discussion dossier.
- The "Vote" section is only visible to the jurors.
- The selected juror can refuse to join the citizen jury and deny giving vote.
- <http://observatory-rrri.info/#>

Citizen Jury: Do You Think 5G Is Good Enough To Replace LTE-Advanced Technology?
 submitted by vananhle on 17/12/2015

Citizen Jury is a place where selected participants (jurors) can vote on a particular RRI topic or decision after an Innovation Café is finished. Participants can refer to the related discussion dossier, ask the witnesses about new terms and brief history of the issue, and discuss with other people by adding comment to have more information on the RRI topic.

Related Discussion Dossier:
 5G Network
 → Ask the witnesses

→ Voting Time

→ Selected Participants

→ Click here to refuse

→ Vote

Title: Do you think 5G is good enough to replace LTE-Advanced technology?

Vote: 0%

100%

5G can replace LTE Advanced

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

Conclusions

In this work, we described the web-based Forum service developed within the EU FP7 project Responsibility. We have adopted a two-step Caucus Process to structure the discussion on RRI issues. A first step is needed for setting up a Dynamic Coalition to address a particular issue. A second step is needed for an Innovation Café in order to carry out the discussion of that issue. An interesting novelty of our work is the integration of the online Forum with the online Citizen Jury, representing a powerful e-Government tool.